

Jerome County, Idaho, Wildland-Urban Interface Wildfire Mitigation Plan

Main Document

October 18, 2004

Vision: *Institutionalize and promote a countywide wildfire hazard mitigation ethic through leadership, professionalism, and excellence, leading the way to a safe, sustainable Jerome County.*



This plan was developed by the Jerome County Wildland-Urban Interface Wildfire Mitigation Plan Committee in cooperation with Northwest Management, Inc., 233 E. Palouse River Dr. P.O. Box 9748, Moscow, Idaho 83843, Phone: (208) 883-4488, Fax: (208) 883-1098, www.Consulting-Foresters.com

Acknowledgments

This Wildland-Urban Interface Wildfire Mitigation Plan represents the efforts and cooperation of a number of organizations and agencies, through the commitment of people working together to improve the preparedness for wildfire events while reducing factors of risk.



Jerome County Commissioners
and the employees of Jerome County



Mid-Snake Resource Conservation and
Development



USDI Bureau of Land Management



USDA Forest Service



Idaho Bureau of Homeland Security



Federal Emergency Management Agency



Idaho Department of Lands



Jerome Rural Fire Protection District
Jerome City Fire Department
First Segregation Fire Protection District
&
Local Businesses and
Citizens of Jerome County

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Chapter I: Overview of this Plan and its Development

1 Introduction

This Wildland-Urban Interface Wildland Fire Mitigation Plan for Jerome County, Idaho, is the result of analyses, professional cooperation and collaboration, assessments of wildfire risks and other factors considered with the intent to reduce the potential for wildfires to threaten people, structures, infrastructure, and unique ecosystems in Jerome County, Idaho. The planning team responsible for implementing this project was led by the Jerome County Commissioners. Agencies and organizations that participated in the planning process included:

- Jerome County Commissioners and County Departments
- Idaho Department of Lands
- USDI Bureau of Land Management, Upper Snake River District (also providing funding through the National Fire Plan)
- Idaho Bureau of Disaster Services
- Mid-Snake Resource Conservation and Development
- Jerome City Fire Department
- First Segregation Fire District
- Jerome Rural Fire District

The Jerome County Commissioners, working cooperatively with the Mid-Snake RC&D, solicited competitive bids from companies to provide the service of leading the assessment and the writing of the **Jerome County Wildland-Urban Interface Wildland Fire Mitigation Plan**. The Commissioners selected Northwest Management, Inc., to provide this service. Northwest Management, Inc., is a professional natural resources consulting firm located in Moscow, Idaho. Established in 1984 NMI provides natural resource management services across the USA. The Project Manager from Northwest Management, Inc. was Dr. William E. Schlosser, a professional forester and regional planner.

1.1 Goals and Guiding Principles

1.1.1 Federal Emergency Management Agency Philosophy

Effective November 1, 2004, a Local Hazard Mitigation Plan approved by the Federal Emergency Management Agency (FEMA) is required for Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Program (PDM) eligibility. The HMGP and PDM program provide funding, through state emergency management agencies, to support local mitigation planning and projects to reduce potential disaster damages.

The new local hazard mitigation plan requirements for HMGP and PDM eligibility is based on the Disaster Mitigation Act of 2000, which amended the Stafford Disaster Relief Act to promote and integrated, cost effective approach to mitigation. Local hazard mitigation plans must meet the minimum requirements of the Stafford Act-Section 322, as outlined in the criteria contained in 44 CFR Part 201. The plan criterion covers the planning process, risk assessment, mitigation strategy, plan maintenance, and adoption requirements.

FEMA will only review a local hazard mitigation plan submitted through the appropriate State Hazard Mitigation Officer (SHMO). Draft versions of local hazard mitigation plans will not be reviewed by FEMA. FEMA will review the final version of a plan prior to local adoption to determine if the plan meets the criteria, but FEMA will be unable to approve it prior to adoption. In Idaho the SHMO is:

Idaho Bureau of Homeland Security
4040 Guard Street, Bldg 600
Boise, ID 83705
Jonathan Perry, 208-334-2336 Ext. 271

A FEMA designed plan will be evaluated on its adherence to a variety of criteria.

- Adoption by the Local Governing Body
- Multi-jurisdictional Plan Adoption
- Multi-jurisdictional Planning Participation
- Documentation of Planning Process
- Identifying Hazards
- Profiling Hazard Events
- Assessing Vulnerability: Identifying Assets
- Assessing Vulnerability: Estimating Potential Losses
- Assessing Vulnerability: Analyzing Development Trends
- Multi-Jurisdictional Risk Assessment
- Local Hazard Mitigation Goals
- Identification and Analysis of Mitigation Measures
- Implementation of Mitigation Measures
- Multi-Jurisdictional Mitigation Strategy
- Monitoring, Evaluating, and Updating the Plan
- Implementation Through Existing Programs
- Continued Public Involvement

1.1.2 Additional State and Federal Guidelines Adopted

The Wildland-Urban Interface Wildfire Mitigation Plan component of this All Hazards Mitigation Plan will include compatibility with FEMA requirements while also adhering to the guidelines proposed in the National Fire Plan, the Idaho Statewide Implementation Plan, and the Healthy Forests Restoration Act (2004). This Wildland-Urban Interface Wildland Fire Mitigation Plan has been prepared in compliance with:

- The National Fire Plan; A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan–May 2002.
- The Idaho Statewide Implementation Strategy for the National Fire Plan–July 2002.
- Healthy Forests Restoration Act (2004)
- The Federal Emergency Management Agency’s Region 10 guidelines for a Local Hazard Mitigation Plan as defined in 44 CFR parts 201 and 206, and as related to a fire mitigation plan chapter of a Natural Hazards Mitigation Plan.

“When implemented, the 10-Year Comprehensive Strategy will contribute to reducing the risks of wildfire to communities and the environment by building collaboration at all levels of government.”

- The NFP 10-Year Comprehensive Strategy August 2001

The objective of combining these four complimentary guidelines is to facilitate an integrated wildland fire risk assessment, identify pre-hazard mitigation activities, and prioritize activities and efforts to achieve the protection of people, structures, the environment, and significant infrastructure in Jerome County while facilitating new opportunities for pre-disaster mitigation funding and cooperation.

1.1.2.1 National Fire Plan

The goals of this Wildland-Urban Interface Fire Mitigation Plan include:

1. Improve Fire Prevention and Suppression
2. Reduce Hazardous Fuels
3. Restore Fire-Adapted Ecosystems
4. Promote Community Assistance

Its three guiding principles are:

1. Priority setting that emphasizes the protection of communities and other high-priority watersheds at-risk.
2. Collaboration among governments and broadly representative stakeholders
3. Accountability through performance measures and monitoring for results.

This Wildland-Urban Interface Fire Mitigation Plan fulfills the National Fire Plan’s 10-Year Comprehensive Strategy and the Idaho Statewide Implementation Strategy for the National Fire Plan. The projects and activities recommended under this plan are in addition to other Federal, state, and private / corporate forest and rangeland management activities. The implementation plan does not alter, diminish, or expand the existing jurisdiction, statutory and regulatory responsibilities and authorities or budget processes of participating Federal, State, and tribal agencies.

By endorsing this implementation plan, all signed parties agree that reducing the threat of wildland fire to people, communities, and ecosystems will require:

- Firefighter and public safety continuing as the highest priority.
- A sustained, long-term and cost-effective investment of resources by all public and private parties, recognizing overall budget parameters affecting Federal, State, Tribal, and local governments.
- A unified effort to implement the collaborative framework called for in the Strategy in a manner that ensures timely decisions at each level.
- Accountability for measuring and monitoring performance and outcomes, and a commitment to factoring findings into future decision making activities.
- The achievement of national goals through action at the local level with particular attention on the unique needs of cross-boundary efforts and the importance of funding on-the-ground activities.

- Communities and individuals in the wildland-urban interface to initiate personal stewardship and volunteer actions that will reduce wildland fire risks.
- Management activities, both in the wildland-urban interface and in at-risk areas across the broader landscape.
- Active rangeland management, including biomass removal and utilization, prescribed fire and other fuels reduction tools to simultaneously meet long-term ecological, economic, and community objectives.

The National Fire Plan identifies a three-tiered organization structure including 1) the local level, 2) state/regional and tribal level, and 3) the national level. This plan adheres to the collaboration and outcomes consistent with a local level plan. Local level collaboration involves participants with direct responsibility for management decisions affecting public and/or private land and resources, fire protection responsibilities, or good working knowledge and interest in local resources. Participants in this planning process include Tribal representatives, local representatives from Federal and State agencies, local governments, landowners and other stakeholders, and community-based groups with a demonstrated commitment to achieving the strategy's four goals. Existing resource advisory committees, watershed councils, or other collaborative entities may serve to achieve coordination at this level. Local involvement, expected to be broadly representative, is a primary source of planning, project prioritization, and resource allocation and coordination at the local level. The role of the private citizen is not to be underestimated, as their input and contribution to all phases of risk assessments, mitigation activities, and project implementation is greatly facilitated by their involvement.

1.1.2.2 Idaho Statewide Implementation Strategy

The Strategy adopted by the State of Idaho is to provide a framework for an organized and coordinated approach to the implementation of the National Fire Plan, specifically the national "10-Year Comprehensive Strategy Implementation Plan".

Emphasis is on a collaborative approach at the following levels:

- County
- State

Within the State of Idaho, the Counties, with the assistance of State and Federal agencies and local expert advice, will develop a risk assessment and mitigation plan to identify local vulnerabilities to wildland fire. A Statewide group will provide oversight and prioritization as needed on a statewide scale.

This strategy is not intended to circumvent any work done to date and individual Counties should not delay implementing any National Fire Plan projects to develop this county plan. Rather, Counties are encouraged to identify priority needs quickly and begin whatever actions necessary to mitigate those vulnerabilities.

It is recognized that implementation activities such as; hazardous fuel treatment, equipment purchases, training, home owner education, community wildland fire mitigation planning, and other activities, will be occurring concurrently with this County wide planning effort.

1.1.2.2.1 County Wildland Fire Interagency Group

Each County within the state has been requested to write a Wildland Fire Mitigation Plan. These plans should contain at least the following five elements:

- 1) Documentation of the process used to develop the mitigation plan. How the plan was developed, who was involved and how the public was involved.
- 2) A risk assessment to identify vulnerabilities to wildfire in the wildland-urban interface (WUI).
- 3) A prioritized mitigation strategy that addresses each of the risks. Examples of these strategies could be: training for fire departments, public education, hazardous fuel treatments, equipment, communications, additional planning, new facilities, infrastructure improvements, code and/or ordinance revision, volunteer efforts, evacuation plans, etc.
- 4) A process for maintenance of the plan which will include monitoring and evaluation of mitigation activities
- 5) Documentation that the plan has been formally adopted by the involved agencies. Basically a signature page of all involved officials.

This five-element plan is an abbreviated version of the FEMA mitigation plan and will begin to meet the requirements for that plan. To develop these plans each county should bring together the following individuals, as appropriate for each county, to make up the County Wildland Fire Interagency Group. It is important that this group has representation from agencies with wildland fire suppression responsibilities:

- County Commissioners (Lead)
- Local Fire Chiefs
- Idaho Department of Lands representative
- USDA Forest Service representative
- USDI Bureau of Land Management representative
- US Fish and Wildlife representative
- Bureau of Indian Affairs
- Local Tribal leaders
- Bureau of Disaster Services
- LEPC Chairperson
- Resource Conservation and Development representative
- State Fish and Game representative
- Interested citizens and community leaders as appropriate
- Other officials as appropriate

Role of Resource Conservation and Development Councils (RC&D) If requested by the County Commissioners, the local RC&D's may be available to assist the County Commissioners in evaluating each County within their council area to determine if there is a wildland fire mitigation plan in place, or if a plan is currently in the development phase. If no plan is in place, the RC&D's, if requested, could be available to assist the Commissioners with the formation of the County Wildland Fire Interagency Group and/or to facilitate the development of wildland fire mitigation plan.

If a plan has been previously completed, the Commissioners will determine if the recommended five elements have been addressed. The Counties will provide a copy of the completed

mitigation plan to the Idaho Department of Lands National Fire Plan Coordinator, which will include a contact list of individuals that developed the plan.

1.1.2.3 National Association of State Foresters

1.1.2.3.1 Identifying and Prioritizing Communities at Risk

This plan is written with the intent to provide the information necessary for decision makers (elected officials) to make informed decisions in order to prioritize projects across the entire county. These decisions may be made from within the council of Commissioners, or through the recommendations of ad hoc groups tasked with making prioritized lists of projects. It is not necessary to rank projects numerically, although that is one approach, rather it may be possible to rank them categorically (high priority set, medium priority set, and so forth) and still accomplish the goals and objectives set forth in this planning document.

The following was prepared by the National Association of State Foresters (NASF), June 27, 2003, and is included here as a reference for the identification of prioritizing treatments between communities.

Purpose: To provide national, uniform guidance for implementing the provisions of the “Collaborative Fuels Treatment” MOU, and to satisfy the requirements of Task e, Goal 4 of the Implementation Plan for the 10-Year Comprehensive Strategy.

Intent: The intent is to establish broad, nationally compatible standards for identifying and prioritizing communities at risk, while allowing for maximum flexibility at the state and regional level. Three basic premises are:

- Include all lands and all ownerships.
- Use a collaborative process that is consistent with the complexity of land ownership patterns, resource management issues, and the number of interested stakeholders.
- Set priorities by evaluating projects, not by ranking communities.

The National Association of State Foresters (NASF) set forth the following guidelines in the Final Draft Concept Paper; Communities at Risk, December 2, 2002.

Task: Develop a definition for “communities at risk” and a process for prioritizing them, per the Implementation Plan for the 10-Year Comprehensive Strategy (Goal 4.e.). In addition, this definition will form the foundation for the NASF commitment to annually identify priority fuels reduction and ecosystem restoration projects in the proposed MOU with the federal agencies (section C.2 (b)).

1.1.2.3.2 Conceptual Approach

1. NASF fully supports the definition of the Wildland Urban Interface (WUI) previously published in the Federal Register. Further, proximity to federal lands should not be a consideration. The WUI is a set of conditions that exists on, or near, areas of wildland fuels nation-wide, regardless of land ownership.
2. Communities at risk (or, alternately, landscapes of similar risk) should be identified on a state-by-state basis with the involvement of all agencies with wildland fire protection responsibilities: state, local, tribal, and federal.
3. It is neither reasonable nor feasible to attempt to prioritize communities on a rank order basis. Rather, communities (or landscapes) should be sorted into three, broad

categories or zones of risk: high, medium, and low. Each state, in collaboration with its local partners, will develop the specific criteria it will use to sort communities or landscapes into the three categories. NASF recommends using the publication “Wildland/Urban Interface Fire Hazard Assessment Methodology” developed by the National Wildland/Urban Interface Fire Protection Program (circa 1998) as a reference guide. (This program, which has since evolved into the Firewise Program, is under the oversight of the National Wildfire Coordinating Group (NWCG)). At minimum, states should consider the following factors when assessing the relative degree of exposure each community (landscape) faces.

- **Risk:** Using historic fire occurrence records and other factors, assess the anticipated probability of a wildfire ignition.
 - **Hazard:** Assess the fuel conditions surrounding the community using a methodology such as fire condition class, or [other] process.
 - **Values Protected:** Evaluate the human values associated with the community or landscape, such as homes, businesses, and community infrastructure (e.g. water systems, utilities, transportation systems, critical care facilities, schools, manufacturing and industrial sites, and high value commercial timber lands).
 - **Protection Capabilities:** Assess the wildland fire protection capabilities of the agencies and local fire departments with jurisdiction.
4. Prioritize by project not by community. Annually prioritize projects within each state using the collaborative process defined in the national, interagency MOU “For the Development of a Collaborative Fuels Treatment Program”. Assign the highest priorities to projects that will provide the greatest benefits either on the landscape or to communities. Attempt to properly sequence treatments on the landscape by working first around and within communities, and then moving further out into the surrounding landscape. This will require:
- First, focus on the zone of highest overall risk but consider projects in all zones. Identify a set of projects that will effectively reduce the level of risk to communities within the zone.
 - Second, determining the community’s willingness and readiness to actively participate in an identified project.
 - Third, determining the willingness and ability of the owner of the surrounding land to undertake, and maintain, a complementary project.
 - Last, set priorities by looking for projects that best meet the three criteria above. It is important to note that projects with the greatest potential to reduce risk to communities and the landscape may not be those in the highest risk zone, particularly if either the community or the surrounding landowner is not willing or able to actively participate.
5. It is important, and necessary, that we be able to demonstrate a level of accomplishment that justifies to Congress the value of continuing the current level of appropriations for the National Fire Plan. Although appealing to appropriators and others, it is not likely that many communities (if any) will ever be removed from the list of communities at risk. Even after treatment, all communities will remain at some, albeit reduced, level of risk. However, by using a science-based system for measuring relative risk, we can likely show that, after treatment (or a series of treatments), communities are at “*reduced risk*”.

Similarly, scattered, individual homes that complete projects to create survivable space could be “counted” as “households at reduced risk”. This would be a way to report progress in reducing risk to scattered homes in areas of low priority for large-scale fuels treatment projects.

Using the concept described above, the NASF believes it is possible to accurately assess the relative risk that communities face from wildland fire. Recognizing that the condition of the vegetation (fuel) on the landscape is dynamic, assessments and re-assessments must be done on a state-by-state basis, using a process that allows for the integration of local knowledge, conditions, and circumstances, with science-based national guidelines. We must remember that it is not only important to lower the risk to communities, but once the risk has been reduced, to maintain those communities at a reduced risk.

Further, it is essential that both the assessment process and the prioritization of projects be done collaboratively, with all local agencies with fire protection jurisdiction – federal, state, local, and tribal – taking an active role.

1.1.2.4 Healthy Forests Restoration Act

On December 3, 2003, President Bush signed into law the Healthy Forests Restoration Act of 2003 to reduce the threat of destructive wildfires while upholding environmental standards and encouraging early public input during review and planning processes. The legislation is based on sound science and helps further the President's Healthy Forests Initiative pledge to care for America's forests and rangelands, reduce the risk of catastrophic fire to communities, help save the lives of firefighters and citizens, and protect threatened and endangered species.

Among other things the Healthy Forests Restoration Act (HFRA):

- Strengthens public participation in developing high priority projects;
- Reduces the complexity of environmental analysis allowing federal land agencies to use the best science available to actively manage land under their protection;
- Creates a pre-decisional objections process encouraging early public participation in project planning; and
- Issues clear guidance for court action challenging HFRA projects.

The Jerome County Wildland-Urban Interface Wildfire Mitigation Plan is developed to adhere to the principles of the HFRA while providing recommendations consistent with the policy document which should assist the federal land management agencies (US Forest Service and Bureau of Land Management) with implementing wildfire mitigation projects in Jerome County that incorporate public involvement and the input from a wide spectrum of fire and emergency services providers in the region.

1.1.3 Local Guidelines and Integration with Other Efforts

1.1.3.1 Jerome County Fire Mitigation Planning Effort and Philosophy

The goals of this planning process include the integration of the National Fire Plan, the Idaho Statewide Implementation Strategy, the Healthy Forests Restoration Act, and the requirements of FEMA for a county-wide Fire Mitigation Plan; a component of the County's All Hazards Mitigation Plan. This effort will utilize the best and most appropriate science from all partners, the integration of local and regional knowledge about wildfire risks and fire behavior, while meeting the needs of local citizens, the regional economy, the significance of this region to the rest of Idaho and the Inland West.

1.1.3.1.1 Mission Statement

To make Jerome County residents, communities, state agencies, local governments, and businesses less vulnerable to the negative effects of wildland fires through the effective administration of wildfire hazard mitigation grant programs, hazard risk assessments, wise and efficient fuels treatments, and a coordinated approach to mitigation policy through federal, state, regional, and local planning efforts. Our combined prioritization will be the protection of people, structures, infrastructure, and unique ecosystems that contribute to our way of life and the sustainability of the local and regional economy.

1.1.3.1.2 Vision Statement

Institutionalize and promote a countywide wildfire hazard mitigation ethic through leadership, professionalism, and excellence, leading the way to a safe, sustainable Jerome County.

1.1.3.1.3 Goals

- To reduce the area of WUI land burned and losses experienced because of wildfires where these fires threaten communities in the wildland-urban interface
- Prioritize the protection of people, structures, infrastructure, and unique ecosystems that contribute to our way of life and the sustainability of the local and regional economy
- Educate communities about the unique challenges of wildfire in the wildland-urban interface (WUI)
- Establish mitigation priorities and develop mitigation strategies in Jerome County
- Strategically locate and plan fuel reduction projects
- Provide recommendations for alternative treatment methods, such as modifying brush density, herbicide treatments, fuel reduction techniques, and disposal or removal of treated fuels
- Meet or exceed the requirements of the National Fire Plan and FEMA for a County level Fire Mitigation Plan

Chapter 2: Planning Process

2 Documenting the Planning Process

Documentation of the planning process, including public involvement, is required to meet FEMA's DMA 2000 (44CFR§201.4(c)(1) and §201.6(c)(1)). This section includes a description of the planning process used to develop this plan, including how it was prepared, who was involved in the process, and how all of the involved agencies participated.

2.1.1 Description of the Planning Process

The Jerome County Wildland-Urban Interface Wildfire Mitigation Plan was developed through a collaborative process involving all of the organizations and agencies detailed in Section 1.0 of this document. The County's local coordinator contacted these organizations directly to invite their participation and schedule meetings of the planning committee. The planning process included 5 distinct phases which were in some cases sequential (step 1 then step 2) and in some cases intermixed (step 4 completed though out the process):

1. **Collection of Data** about the extent and periodicity of wildfires in and around Jerome County. This included an area encompassing Jerome, Twin Falls and Minidoka Counties to insure a robust dataset for making inferences about fires in Jerome County specifically; this included a wildfire extent and ignition profile.
2. **Field Observations and Estimations** about wildfire risks including fuels assessments, juxtaposition of structures and infrastructure to wildland fuels, access, and potential treatments by wildfire specialists, rural fire chiefs and representatives of the BLM.
3. **Mapping** of data relevant to wildfire control and treatments, structures, resource values, infrastructure, fire prone landscapes, and related data.
4. **Facilitation of Public Involvement** from the formation of the planning committee, to a public mail survey, news releases, public meetings, public review of draft documents, and acceptance of the final plan by the signatory representatives.
5. **Analysis and Drafting of the Report** to integrate the results of the planning process, providing ample review and integration of committee and public input, followed by acceptance of the final document.

Planning efforts were led by the Project Director, Dr. William E. Schlosser, of Northwest Management, Inc. Dr. Schlosser holds 4 degrees in natural resource management (A.S. geology; B.S. forest and range management; M.S. natural resource economic & finance; Ph.D. environmental science and regional planning). Project Specialist John T. McGee led community and committee involvement efforts. Fire Management specialists Ken Homik and Dennis Thomas coordinated fire mitigation planning recommendations. Together, they led a team of resource professionals that included fire mitigation specialists, wildfire control specialists, resource management professionals, and hazard mitigation experts.

They were the point-people for team members to share data and information with during the plan's development. They and the planning team met with many residents of the county during the inspections of communities, infrastructure, and hazard abatement assessments. This methodology, when coupled with the other approaches in this process, worked effectively to integrate a wide spectrum of observations and interpretations about the project.

The planning philosophy employed in this project included the open and free sharing of information with interested parties. Information from federal and state agencies was integrated into the database of knowledge used in this project. Meetings with the committee were held throughout the planning process to facilitate a sharing of information between cooperators.

When the public meetings were held, many of the committee members were in attendance and shared their support and experiences with the planning process and their interpretations of the results.

2.2 Public Involvement

Public involvement in this plan was made a priority from the inception of the project. There were a number of ways that public involvement was sought and facilitated. In some cases this led to members of the public providing information and seeking an active role in protecting their own homes and businesses, while in other cases it led to the public becoming more aware of the process without becoming directly involved in the planning process.

2.2.1 News Releases

Under the auspices of the Jerome County Wildland-Urban Interface Wildfire Mitigation Planning Committee, news releases were submitted to the Northside News in Jerome and the Times News in Twin Falls. Press releases sent out to three area radio stations KEZJ, KART, and KLIX.

2.2.1.1 Radio Messages

A short news release was aired over the KEZJ, KART, and KLIX radio stations the week of August 9th, 2004 to announcing the goals of the planning committee, the purpose of the mitigation plan, the date and times of public meetings, and contact information.

2.2.1.2 Newspaper Articles

Committee and public meeting announcements were submitted to the **Northside News** and the **Times News**. A newspaper article ran in the **Northside News** on August 10th entitled “Jerome County Plans to Mitigate Risk.” The article outlined the intent of the plan and how the planning process would progress. The following is an example of one of the newspaper announcements that was submitted to the local newspaper.



Jerome County plans to mitigate wildfire risk

The Jerome County Commissioners have created a Wildfire Mitigation Plan Committee to complete a Wildfire Mitigation Plan for Jerome County as part of the National Fire Plan authorized by Congress and the Whitehouse.

The Jerome County Wildfire Mitigation Plan will include risk analysis at the community level with predictive models for where fires are likely to ignite and where they are likely to spread rapidly once ignited.

Northwest Management,

Inc., has been retained by Jerome County to provide wildfire risk assessments, mapping, field inspections, and interviews, and to collaborate with the committee to prepare the plan. The committee includes rural and wildland fire districts, land managers, elected officials, agency representatives, and others.

Northwest Management specialists are conducting analyses of fire-prone landscapes and making recommendations for potential treatments. Specific activities for

homes, structures, infrastructure, and resource capabilities will be proposed as part of the analysis.

One of the most important steps in gathering information about fire risk in Jerome County is to conduct a homeowners' survey. Northwest Management, Inc., in cooperation with local fire officials, have mailed a brief survey to randomly selected homeowners in the county seeking details about home construction materials, proximity to water sources, and other risk factors surrounding homes.

This survey is very important to the success of the plan. Those homes that receive a survey are asked to please take the time to complete it, thereby benefiting the community overall.

The planning team will be conducting public meetings to discuss preliminary findings and to seek public involvement in the planning process in September.

For more information on the Fire Mitigation Plan projects in Jerome County, contact your County Commissioner, John McGee, Northwest

Management, Inc. Jerome County local coordinator, at (208) 459-8404, or Dennis Thomas or William Schlosser at the Northwest Management, Inc. office in Moscow, Idaho, at (208) 883-4488.

Public information meetings:

- Sept. 13, 7 to 9 p.m., Hazelton City Hall in Hazelton.

- Sept. 14, 7 to 9 p.m., Silver & Gold Senior Center in Eden.

- Sept. 15, 7 to 9 p.m., at Jerome County Courthouse in Jerome.

2.2.2 Public Mail Survey

In order to collect a broad base of perceptions about wildland fire and individual risk factors of homeowners in Jerome County, a mail survey was conducted. Using a state and county database of landowners in Jerome County, homeowners from the Wildland-Urban Interface surrounding each community were identified. In order to be included in the database, individuals were selected that own property and have a dwelling in Jerome County, as well as a mailing address in Jerome County. This database created a list of unique names to which was affixed a random number that contributed to the probability of being selected for the public mail survey. A total of 233 landowners meeting the above criteria were selected.

The public mail survey developed for this project has been used in the past by Northwest Management, Inc., during the execution of other WUI Wildfire Mitigation Plans. The survey used The Total Design Method (Dillman 1978) as a model to schedule the timing and content of letters sent to the selected recipients. Copies of each cover letter, mail survey, and communication are included in Appendix III.

The first in the series of mailing was sent August 6, 2004, and included a cover letter, a survey, and an offer of receiving a custom GIS map of the area of their selection in Jerome County if they would complete and return the survey. The free map incentive was tied into assisting their community and helping their interests by participating in this process. Each letter also informed residents about the planning process. A return self-addressed envelope was included in each packet. A postcard reminder was sent to the non-respondents on August 16, 2004, encouraging their response. A final mailing, with a revised cover letter pleading with them to participate, was sent to non-respondents on August 24, 2004.

Surveys were returned during the months of July and August. A total of 109 residents responded to the survey (as of September 30, 2004 – *this will be updated until the final plan is completed*). No surveys were returned as undeliverable, and two responded that they no longer live in the area. The effective response rate for this survey was 48% (*to date*). Statistically, this response rate allows the interpretation of all of the response variables significantly at the 99% confidence level.

2.2.2.1 Survey Results

A summary of the survey's results will be presented here and then referred back to during the ensuing discussions on the need for various treatments, education, and other information. *Survey information will be updated until the completion of the plan.*

Of the survey respondents, 100% have a home within Jerome County. 96% of the respondents consider this their primary residence. About 4% of the respondents were from the Eden area, 8% were from the Hazelton area, 65% were from the Jerome area, and 24% were from other rural areas of the county.

Ninety-eight percent of the respondents correctly identified that they have emergency telephone 911 services in their area. Ninety-nine percent of the respondents correctly identified that they have structural fire protection, while one percent indicate that they do not have structural fire protection. This one percent did indeed have structural protection when they indicated that they were in an unprotected area.

Respondents were asked to indicate the type of roofing material covering the main structure of their home. Seventy five percent of respondents indicated their homes were covered with a composite material (asphalt shingles). About 11% indicated their home were covered with a metal (eg., aluminum, tin) roofing material. Roughly 11% of the respondents indicated they have a wooden roofing material such as shakes or shingles. One percent of the respondents indicated that they have a ceramic tile roof, and 3% did not indicate what types of roofing material they had.

Residents were asked to evaluate the proximity of brush within certain distances of their homes. Often, the density of brush around a home is an indicator of increased fire risk. The results are presented in Table 2.1

Table 2.1 Survey responses indicating the proximity of brush to homes.

% area in brush	Within 250 feet of your home	Within 75 feet of your home
No brush	50%	60%
Less than 10% of area	12%	17%
Between 10% and 25%	9%	12%
More than 25% of area	11%	3%

Ninety seven percent of those returning the survey indicated they have a lawn surrounding their home. Of these individual home sites, 89% indicated they keep this lawn green through the fire season. The remaining 11% did not indicate whether they kept their lawn green or not.

The average driveway length of the respondents was approximately 304 feet long, from their main road to their parking area. Roughly 1% of the respondents had a driveway over ½ mile long, and a corresponding 7% had a driveway over ¼ of a mile long. Of these homes with lengthy driveways, roughly 55% have turnouts allowing two vehicles to pass each other in the case of an emergency. Three percent of the respondents indicate that they have a bridge accessing their property, and that the bridge was adequate to support a heavy fire engine. Approximately 78% of all homeowners indicated they have an alternative escape route, with the remaining 22% indicating only one-way-in and one-way-out.

Nearly all respondents (99%) indicated they have some type of tools to use against a wildfire that threatens their home. Table 2.2 summarizes these responses.

Table 2.2. Percent of homes with indicated fire fighting tools in Jerome County.

99% – Hand tools (shovel, Pulaski, etc.)
4% – Portable water tank
6% – Stationery water tank
30% – Pond, lake, or stream water supply close

Table 2.2. Percent of homes with indicated fire fighting tools in Jerome County.

15% – Water pump and fire hose

13% – Equipment suitable for creating fire breaks (bulldozer, cat, skidder, etc.)

Roughly 10% of the respondents in Jerome County indicated they have someone in their household trained in wildland fire fighting. Approximately 9% indicated someone in the household had been trained in structural fire fighting. However, it is important to note that these questions did not specify a standard nor did it refer to how long ago the training was received. Ten percent of the respondents indicated that they had someone trained as a emergency medical technician in their household, 61% indicate that they have someone trained in first aid, and 12% indicate that they have someone in their household trained in search and rescue.

A couple of questions ask whether homeowners conduct periodic fire mitigation efforts on their property. Respondents were asked if they conduct a periodic fuels reduction program near their home sites, such as grass or brush burning. Fifty percent of the respondents indicate that they periodically burn or mow grass and brush in the vicinity of their home. Forty-four percent responded that livestock (cattle, horses, sheep) graze the grasses and forbs around their home sites.

Respondents were asked to complete a fuel hazard rating worksheet to assess their home’s fire risk rating. An additional column titled “results” has been added to the table, showing the percent of respondents circling each rating (Table 2.3). Averages may not add to 100% due to non-responses to particular questions.

Circle the ratings in each category that best describes your home.

Table 2.3. Fuel Hazard Rating Worksheet		Rating	Results
Fuel Hazard	Small, light fuels (grasses, forbs, weeds, shrubs)	1	71%
	Medium size fuels (brush, large shrubs, small trees)	2	23%
	Heavy, large fuels (woodlands, timber, heavy brush)	3	0%
Slope Hazard	Mild slopes (0-5%)	1	86%
	Moderate slope (6-20%)	2	5%
	Steep Slopes (21-40%)	3	2%
	Extreme slopes (41% and greater)	4	0%
Structure Hazard	Noncombustible roof and noncombustible siding materials	1	35%
	Noncombustible roof and combustible siding material	3	17%
	Combustible roof and noncombustible siding material	7	20%
	Combustible roof and combustible siding materials	10	19%
Additional Factors	Rough topography that contains several steep canyons or ridges	+2	Average -2.0 pts
	Areas having history of higher than average fire occurrence	+3	
	Areas exposed to severe fire weather and strong winds	+4	
	Areas with existing fuel modifications or usable fire breaks	-3	
	Areas with local facilities (water systems, rural fire districts, dozers)	-3	

Calculating your risk

Values below are the average response value to each question.

$$\begin{array}{rcl}
 \text{Fuel hazard} & \underline{1.3} & \times \text{Slope Hazard} \underline{1.1} = \underline{2.4} \\
 \text{Structural hazard} & + & \underline{4.6} \\
 \text{Additional factors} & (+ \text{ or } -) & \underline{-2.0} \\
 \text{Total Hazard Points} & = & \underline{5.0}
 \end{array}$$

Table 2.4. Percent of respondents in each risk category as determined by the survey respondents.

- 00% – Extreme Risk = 26 + points
- 00% – High Risk = 16–25 points
- 35% – Moderate Risk = 6–15 points
- 53% – Low Risk = 6 or less points

Maximum household rating form score was 16 points, as assessed by the homeowners. These numbers were compared to observations made by field crews trained in wildland fire fighting.

These results indicate that for the most part, these indications are only slightly lower than the risk rating assigned by the “professionals”. Anecdotal evidence would indicate that Jerome County landowners involved in this survey have a more realistic view of wildfire risk than the landowners in other Idaho counties where these questions have been asked.

Finally, respondents were asked “if offered in your area, would members of your household attend a free, or low cost, one-day training seminar designed to teach homeowners in the wildland–urban interface how to improve the survivable space surrounding your home and adjacent outbuildings?” Approximately 47% of the respondents indicated a desire to participate in this type of training.

Homeowners were also asked, “How do you feel Wildland-Urban Interface Fire Mitigation projects should be funded in the areas surrounding homes, communities, and infrastructure such as power lines and major roads?” Responses are summarized in Table 2.5.

Table 2.5. Public Opinion of Wildfire Mitigation Funding Preferences.

	Mark the box that best applies to your preference		
	100% Public Funding	Cost-Share (Public & Private)	Privately Funded (Owner or Company)
Home Defensibility Projects	17%	50%	38%
Community Defensibility Projects	42%	35%	10%
Infrastructure Projects Roads, Bridges, Power Lines, Etc.	50%	17%	18%

2.2.2.2 Committee Meetings

The following list of people who participated in the planning committee meetings, volunteered time, or responded to elements of the Jerome County Wildland-Urban Interface Wildfire Mitigation Plan’s preparation.

- Joe RobinetteJerome Rural Fire District #1
- Donald UttFirst Segregation Fire District
- John ElorrietaJerome County
- John MooreSIRCOMM
- Julie Thomas.....Mid-Snake Resource Conservation & Development
- Jim Auclair.....Jerome City Fire Department
- Dan Daniels.....Jerome City Fire Department
- Rochelle Ahrens.....Sawtooth National Forest
- Art BrownJerome County Planning and Zoning
- Clint Blackwood.....Disaster Services Coordinator
- Curtis JensenBureau of Land Management
- Dennis S. Thomas.....Northwest Management, Inc.
- John McGee.....Northwest Management, Inc.

- Ken Homik.....Northwest Management, Inc.
- Toby Brown.....Northwest Management, Inc.
- William E. SchlosserNorthwest Management, Inc.

Committee Meetings were scheduled and held on the following dates:

February 24, 2004

John McGee opened the first meeting of the Jerome County Fire Mitigation Planning Committee with introductions and an overview of the planning process. He also discussed specific information that members of the committee would have to provide to develop a complete mitigation plan. Contact information was exchanged between the committee members.

- Schedule of Meetings: NMI would like to hold one meeting each month until the conclusion of the planning process. The fourth Monday of every month at 11 am was approved by the committee. (Feb. 24, March 22, April 26, etc.) The Jerome EMS building conference is a central location.
- Map Products: NMI developed several GIS maps showing landowners, fire districts, past fires, and fire prone landscapes. The committee reviewed these maps and made corrections. NMI will update the maps for the next meeting. The committee was asked to provide any additional GIS information that may be available to Dr. Schlosser.
- Resources and Capabilities Guide: John explained the type of information that needed to be included in the survey handed out to all of the fire districts. This information will be made into a booklet including 8 ½ by 11 district maps. This will become a summary of available resources that all emergency response agencies will have a copy of.
- Fire Risk Assessments: NMI personnel has made site visits to all of the identified communities in Jerome County. A summary of observations about the fuels in each community, the access, and potential mitigation treatments will be handed out hopefully at the next meeting. If any of the committee members has past, current, or future fire mitigation projects planned, please provide this information to either directly to John or NMI.
- Public Involvement: John explained the importance of public involvement to the planning process. Committee members were encouraged to invite interested community members to the meetings. The public surveys will be sent out in the next few weeks to gather feedback from residents. The County Assessor’s office is supposed to provide a mailing list. Public meetings will also be held to share information and facilitate public input. The committee will be the first to review the draft document, then it goes out for public review. County Commissioners will have the final approval.

March 22, 2004

John McGee began the meeting by making introductions and updating the committee on NMI’s accomplishments since the last meeting. The location and date (April 26) of the next meeting was confirmed.

NMI brought new maps for the committee to review. The committee was asked to review the maps one more time and make any final corrections. The final maps will be completed by next month’s meeting.

The Resources and Capabilities Guide was discussed at length. There are a number of potential resource and capability enhancements that need to be identified by the rural and wildland fire fighting districts. All of the needs identified by the districts are in line with increasing

the ability to respond to emergencies in the WUI and are fully supported by the planning committee. Fire chiefs need to email their surveys to John or NMI ASAP. The committee came up with a list of specific needs:

- Night vision camera – infra red
- Jerome Rural needs a 2nd station near the Flying J
- Need to expand the training room in the Eden building
- Build a central training center for the Magic Valley
- Training needs to be available more than once a year
- Volunteer retirement system and benefits
- Grant writer and researcher
- Need to start conversion from dual band to narrow band radio system
- Improve communications between Southern Idaho Dispatch and SIRCOMM
- Need a repeater by the transfer station to remove dead spots
- Eden needs a water tender, new trucks, and a structure
- If a new satellite station is built near Jerome, they will need trucks to staff
- Access to a helicopter
- Breathing apparatus and wildland fire fighting gear
- HazMat contamination unit
- Building, training, and equipment for new EMS-ambulance in eastern Jerome County

April 26, 2004

John McGee began the meeting by making introductions and updating the committee on NMI's progress since the last meeting. The committee confirmed June 14th at the EMS building for the next meeting.

Copies of the community assessments draft document were handed out to the committee to be reviewed. Changes can be made by calling or emailing John or Dr. Schlosser. Ken Homik from NMI is trying to schedule meetings with fire districts to discuss Resources and Capabilities surveys and to make possible changes to the community assessments.

Updated maps were presented to the committee. Primary and secondary access routes were discussed and drawn on the maps. I-84 and Highways 93, 25, and 50 were acknowledged as important. Other important roads were Golf Course Road, North Road, and West Road. Repeater locations were also identified. Final maps should be made by the next meeting.

The Jerome County Assessors office needs to provide the mailing list, so the public surveys can be launched. John will email committee members a copy of the public survey and electronic copy of the Resources and Capabilities Guide.

July 16, 28 and 29, 2004

Ken Homik from NMI visited with Fire Chief Jim Auclair from the Jerome City Fire Department on July 16 and discussed fire-related issues that affect the City of Jerome as well as the county at large. On July 28, Ken Homik, Dennis Thomas (both from NMI), Curtis Jenson from the BLM and Fire Chief Don Utt toured the First Segregation Fire District to learn of the unique issues facing the district. On July 29, Ken Homik, Curtis Jensen and the Assistant Fire Chief of the Jerome Rural Fire District toured the Jerome Rural District. Each of these meetings helped identify the factors that contribute to fire risk throughout the county. The input from the Fire Chiefs was critical in refining community risk assessments and in developing the mitigation activities outlined later in this plan.

August 25, 2004

John McGee opened the meeting with introductions followed by an update on plan development progress. The bulk of the meeting was spent in detailed review of the community assessments by fire district. A review and discussions of mitigation activities that had been identified thus far followed. Any changes and points of clarification were noted and integrated into the community assessments as well as into the mitigation recommendations. The meeting concluded with a review of infrastructure maps and a timeline for plan completion.

2.2.2.3 Public Meetings

Public information meetings were held on September 13, 2004 in Hazelton, September 14, 2004 in Eden, and September 15, 2004 in Jerome, Idaho. The purpose of these meetings was to share information on the planning process with a broadly representative cross section of Jerome County landowners. All meetings had wall maps posted in the meeting rooms with many of the analysis results summarized specifically for the risk assessments, location of structures, fire protection, and related information.

2.2.2.3.1 Hazelton Public Meeting

September 14, Hazelton City Hall- 7:00 to 9:00 PM

2.2.2.3.2 Eden Public Meeting

September 15, 2004 – Eden Senior Center

2.2.2.3.3 Jerome Public Meeting

September 15, 2004 – Jerome County Courthouse- 7:00 to 9:00 PM

2.2.2.3.4 Meeting Notices

Public notices of these meetings were submitted to the **Times News** and the **Northside News**. The notices were asked to run from August 4 to August 12, 2004.

Jerome County Wildland Urban Interface Wildfire Mitigation Plan

The public is invited to attend meetings and provide input concerning in the Jerome County Fire Mitigation Plan. The Plan includes risk analysis at the community level with predictive models for where fires are likely to ignite and where they are likely to spread rapidly once ignited. The committee involved includes rural and wildland fire districts, land managers, elected officials, agency representatives, and others.

For more information on the Fire Mitigation Plan or if you have questions contact Northwest Management, Inc. project managers William Schlosser or Dennis Thomas at (208) 883-4488, the Jerome local coordinator John McGee at (208) 459-8404, or your County Commissioner.

Meeting dates and locations are listed below:

September 14, 2004 7 PM to 9 PM

Hazelton City Hall

September 15, 2004 7 PM to 9 PM

Eden Senior Center

September 16, 2004 7 PM to 9 PM

Jerome Count Courthouse

2.3 Review of the WUI Wildfire Mitigation Plan

Reviews of sections of this document were conducted by the planning committee during the planning process as maps, summaries, written assessments and mitigation recommendations were completed. These individuals included fire mitigation specialists, fire chiefs, planners, elected officials, BLM representatives and others involved in the coordination process. Preliminary findings were discussed and comments were collected and integrated into the plan.

Amendments and changes to this document should be sent to Northwest Management, Inc. for inclusion in the final plan. The public review process is open from October 4, 2004 – October 14, 2004. All comments should be e-mailed to Brown@consulting-foresters.com or sent to Northwest Management, Inc., PO Box 9748, Moscow, Idaho 83843. Edits will be entered as they are received.

The completed plan will be adopted by the County Commissioners on October 18, 2004, depending on the comments received and any actions needed as a result. Suggestions and comments on this would be appreciated. The ultimate decision is made by the County Commissioners.

You can send comments directly to Brown@consulting-foresters.com or call Northwest Management, Inc. at 208-883-4488.

Chapter 3: County Characteristics & Risk Assessment

3 Background and Area Description

Jerome County reported an increase in total population from 15,138 in 1990 to 18,342 in 2000 with approximately 6,299 households. Jerome County has three incorporated communities, Jerome (pop. 7,780), Eden (pop. 411) and Hazelton (pop. 687). The 2002 Census identifies two census tracts in the county; Jerome (pop. 15,103) and Eden-Hazelton (pop. 2,680). Nearly 82% of the total county population resides in Jerome. The total land area of the county is roughly 600 square miles (384,000 acres).

Table 3.1 summarizes some relevant demographic statistics for Jerome County.

Table 3.1. Selected demographic statistics for Jerome County, Idaho from the Census 2000.

Subject	Number	Percent
Total population	18,342	100.0
SEX AND AGE		
Male	9,424	51.4
Female	8,918	48.6
Under 5 years	1,479	8.1
5 to 9 years	1,729	9.4
10 to 14 years	1,537	8.4
15 to 19 years	1,592	8.7
20 to 24 years	1,059	5.8
25 to 34 years	2,175	11.9
35 to 44 years	2,779	15.2
45 to 54 years	2,294	12.5
55 to 59 years	743	4.1
60 to 64 years	693	3.8
65 to 74 years	1,214	6.6
75 to 84 years	823	4.5
85 years and over	225	1.2
Median age (years)	33.1	(X)
18 years and over	12,539	68.4
Male	6,375	34.8
Female	6,164	33.6
21 years and over	11,779	64.2
62 years and over	2,704	14.7
65 years and over	2,262	12.3
Male	1,045	5.7
Female	1,217	6.6

Table 3.1. Selected demographic statistics for Jerome County, Idaho from the Census 2000.

Subject	Number	Percent
RELATIONSHIP		
Population	18,342	100.0
In households	18,231	99.4
Householder	6,299	34.3
Spouse	4,105	22.4
Child	6,364	34.7
Own child under 18 years	5,474	29.8
Other relatives	763	4.2
Under 18 years	259	1.4
Nonrelatives	700	3.8
Unmarried partner	283	1.5
In group quarters	111	0.6
Institutionalized population	48	0.3
Noninstitutionalized population	63	0.3
HOUSEHOLDS BY TYPE		
Households	6,299	100.0
Family households (families)	4,825	76.6
With own children under 18 years	2,568	40.8
Married-couple family	4,109	65.2
With own children under 18 years	2,073	32.9
Female householder, no husband present	459	7.3
With own children under 18 years	356	5.7
Nonfamily households	1,474	23.4
Householder living alone	1,223	19.4
Householder 65 years and over	595	9.4
Households with individuals under 18 years	2,700	42.9
Households with individuals 65 years and over	2,210	35.1
Average household size	2.89	(X)
Average family size	3.33	(X)
HOUSING TENURE		
Occupied housing units	6,298	100.0
Owner-occupied housing units	4,407	70.0
Renter-occupied housing units	1,891	30.0
Average household size of owner-occupied unit	2.77	(X)
Average household size of renter-occupied unit	3.19	(X)

(X) Not applicable

¹ Other Asian alone, or two or more Asian categories.

² Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

³ In combination with one or more other races listed. The six numbers may add to more than the total population and the six percentages may add to more than 100 percent because individuals may report more than one race.

3.1 Socioeconomics

Jerome County had a total of 6,298 occupied housing units and a population density of 30.6 persons per square mile reported in the 2000 Census (Table 3.1). Ethnicity in Jerome County is distributed: white 87%, black or African American 0.2%, American Indian or Alaskan Native 0.7%, other race 9.8%, two or more races 1.9%, and Hispanic or Latino 17.2%.

Specific economic data for individual communities is collected by the US Census; in Jerome County this includes Jerome and Eden-Hazelton. Jerome County households earn a median income of \$34,696 annually. In 2000, Jerome earned a median income of 35,542, which was above the County median income during the same period. The communities of Eden and Hazelton had a median household income of \$30,975, in 2000, which is below the Jerome County median during the same period.

Table 3.2 shows the dispersal of households in various income categories of all communities.

Table 3.2. Income in 1999	Jerome County	
	Number	Percent
Households	6,299	100.0
Less than \$10,000	531	8.4
\$10,000 to \$14,999	453	7.2
\$15,000 to \$24,999	1,171	18.6
\$25,000 to \$34,999	1,020	16.2
\$35,000 to \$49,999	1,330	21.1
\$50,000 to \$74,999	1,051	16.7
\$75,000 to \$99,999	441	7.0
\$100,000 to \$149,999	214	3.4
\$150,000 to \$199,999	33	0.5
\$200,000 or more	55	0.9
Median household income (dollars)	34,696	(X)

(Census 2000)

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, directs federal agencies to identify and address any disproportionately high adverse human health or environmental effects of its projects on minority or low-income populations. In Jerome County, a significant number of families are at or below the poverty level. Approximately 10.7% of Jerome County families are below poverty level (Table 3.3).

Table 3.3. Poverty Status in 1999 (below poverty level)	Jerome County	
	Number	Percent
Families	515	(X)
Percent below poverty level	(X)	10.7
With related children under 18 years	438	(X)
Percent below poverty level	(X)	16.4
With related children under 5 years	265	(X)
Percent below poverty level	(X)	23.5

Table 3.3. Poverty Status in 1999 (below poverty level)	Jerome County	
	Number	Percent
Families with female householder, no husband present	189	(X)
Percent below poverty level	(X)	41.2
With related children under 18 years	189	(X)
Percent below poverty level	(X)	50.3
With related children under 5 years	101	(X)
Percent below poverty level	(X)	64.3
Individuals	2,526	(X)
Percent below poverty level	(X)	13.9
18 years and over	1,488	(X)
Percent below poverty level	(X)	11.9
65 years and over	222	(X)
Percent below poverty level	(X)	9.9
Related children under 18 years	1,029	(X)
Percent below poverty level	(X)	17.9
Related children 5 to 17 years	663	(X)
Percent below poverty level	(X)	15.5
Unrelated individuals 15 years and over	555	(X)
Percent below poverty level	(X)	25.5

(Census 2000)

The unemployment rate was 3.8% in Jerome County in 1999, compared to 4.4% nationally during the same period. Approximately 17% of the Jerome County employed population worked in natural resources, with much of the indirect employment relying on the employment created through these natural resource occupations; Table 3.4 (Census 2000).

Table 3.4. Employment & Industry	Jerome County	
	Number	Percent
Employed civilian population 16 years and over	8,084	100.0
OCCUPATION		
Management, professional, and related occupations	2,235	27.6
Service occupations	1,254	15.5
Sales and office occupations	1,726	21.4
Farming, fishing, and forestry occupations	743	9.2
Construction, extraction, and maintenance occupations	823	10.2
Production, transportation, and material moving occupations	1,303	16.1
INDUSTRY		
Agriculture, forestry, fishing and hunting, and mining	1,338	16.6
Construction	611	7.6
Manufacturing	962	11.9
Wholesale trade	314	3.9
Retail trade	1,022	12.6
Transportation and warehousing, and utilities	622	7.7

Table 3.4. Employment & Industry	Jerome County	
	Number	Percent
Information	95	1.2
Finance, insurance, real estate, and rental and leasing	284	3.5
Professional, scientific, management, administrative, and waste management services	283	3.5
Educational, health and social services	1,241	15.4
Arts, entertainment, recreation, accommodation and food services	550	6.8
Other services (except public administration)	336	4.2
Public administration	426	5.3

Approximately 73% of Jerome County's employed persons are private wage and salary workers, while around 14% are government workers (Table 3.5).

Table 3.5. Class of Worker	Jerome County	
	Number	Percent
Private wage and salary workers	5,868	72.6
Government workers	1,148	14.2
Self-employed workers in own not incorporated business	1,004	12.4
Unpaid family workers	64	0.8

(Census 2000)

3.1.1 European Settlement of Jerome County

Information summarized from Jerome and Twin Falls Counties soil survey

The first known inhabitants in the survey area were Shoshone and Northern Paiute Indians, who seasonally migrated between the Snake River and the southern uplands. In 1811 the Pacific Fur Company explored the area. Beaver trappers frequented the local streams in the 1820's and 1830's. The Oregon Trail, which generally followed the Snake River, was established in 1843. Emigrants passed through the area until 1863, when the Halliday Stage Line built Home Station on Rock Creek. Two years later Rock Creek Station, the area's first store, was erected next to Home Station. About 1865 gold was discovered along the Snake River. The placer mining camps of Dry Town, Mudbarville, Springtown, and Waterbug boomed, but they were busted by 1875.

Cattle ranching, an important industry in the late 1870's, remained the main industry in the survey area until the availability of irrigation water for farming. In 1903 Milner Dam on the Snake River was completed. Farmers then settled the central part of the area, which resulted in the establishment of Jerome and Twin Falls Counties. The city of Twin Falls was platted in 1904, and Jerome County was formed from the western part of Cassia County in 1907. In 1919 Jerome County was created from parts of Minidoka, Lincoln, and Gooding Counties. The city of Jerome was founded the same year. The towns of Buhl, Jerome, and Twin Falls became the main shopping and industrial centers. Other smaller towns served as secondary shopping centers for their immediate areas.

3.2 Description of Jerome County

The city and county of Jerome are located in South-central Southern Idaho in the broad Snake River Plain. The county is roughly 4,000 feet above sea level and is located on a fertile volcanic

based plain, centered on the Snake River Canyon. This is a semi-arid high desert location that due to extensive irrigation is well known for its capacity to produce crops. Major crops produced here include potatoes, sugar beets, wheat, beans, brewing barley, peas, alfalfa, and corn. The land ownership pattern in the non-farmed portions of the county is mix of state, private, and federal. Much of the northern region of the county is owned and administered by the BLM and is actively grazed in support of the local livestock industry. The BLM also manages the Snake River Rim Recreation Area in south central Jerome County to the east of Highway 93.

Settlement patterns in Jerome County tend to be rural, with most settlement associated with the farms scattered throughout the river valley. The only community in Jerome County with a population over 1,000 inhabitants is the city of Jerome, which serves as the County Seat. Other Communities in Jerome include Eden and Hazelton, both of which are along Highway 25. Each of these communities is surrounded by irrigated agricultural land, with little to no native wildland fuels in the vicinity of the communities. Development along the periphery of the rangelands does expose some homes to wildland fire risk, although the risk is generally minimal.

3.2.1 Highways

The main arterials through Jerome County are Interstate 84 and U.S. Highway 93. Interstate Hwy I-84 traverses the southern part of the county from northwest to southeast, passing near each of the three community centers. I-84 provides adequate on-off ramps for easy access and is the main transportation route for the trucking industry in the northwestern section of the United States. I-84 also provides good connections eastward to Salt Lake City and points beyond. U.S. 93 is the sole paved route south through Twin Falls County and into Nevada and also provides a paved access route north into Montana. Both I-84 and Highway 93 both serve as ignition corridors through Jerome County, as the high traffic volume increases fire occurrence along the roadways. State Routes 50, 25, and 79 are also primary transportation routes through the county. All of these roadways are typically bordered by rangeland or agricultural fields. Heavy large truck traffic is particularly intense during the summer and fall months due to harvesting activities.

3.2.2 Rivers

The only major river is the Snake River, which forms the southern border of the county. During the Great Migration over the Oregon Trail and still today, the Snake River was a large financial entity in Jerome County providing many recreational and economic resources. Other important bodies of water in the county are Wilson Lake Reservoir and a multitude of small streams and springs and irrigation canals.

3.2.3 Temperature

In winter, the average daily temperature is 29 degrees Fahrenheit. The lowest temperature on record in Jerome, Idaho was -24 degrees on December 22, 1990. In summer, the average daily temperature is 70 degrees Fahrenheit. The highest temperature on record in Jerome was 106 degrees on August 9, 1990.

3.2.4 Growing Season

The total annual precipitation is about 10 inches. Of this, about 3 inches, or 30%, usually falls in June through September. The growing season for most crops falls within this period.

3.2.5 Days of Sunshine

The sun shines 83 percent of the time in summer and 45 percent of the time in winter.

3.2.6 Recreation

The deep canyons, open deserts, lava fields, and rolling uplands provide year-round outdoor opportunities for hunters, fishermen, water and winter sports enthusiasts, picnickers, hikers, campers, sightseers, and students of photography and nature.

Fishing in the County’s rivers, streams, and reservoirs is a favorite activity of many people. The Snake River, which forms the southern border of the County, has many sportsman access sites for fishing, camping, and sightseeing. The river also offers a multitude of boating, rafting, and swimming opportunities. Wilson Lake Reservoir is located just off State Route 25 near Hazelton and offers picnicking, swimming, and boating facilities. The BLM Snake River Rim SRMA near Shoshone Falls offers off-road vehicle trails, mountain biking, hiking, hunting, fishing, and swimming opportunities. Another popular place is Scott’s Access south of Jerome which provides opportunities for boating, fishing, and hunt waterfowl and upland game birds.

Much of the northeastern and parts of the south central portions of the County are administered by the Bureau of Land Management. These areas are open to the public year round. Although there are no developed sites, residents of Jerome County use these lands to hunt, four-wheel, mountain bike, and drive off-road vehicles among many other things. Recreational use in these highly flammable environments is directly correlated with fire occurrence, as high levels of visitation increase the probability of human-caused fires.

3.2.7 Resource Dependency

The communities of Jerome County have been evaluated by the University of Idaho College of Natural Resources Policy Analysis Group (PAG) for the degree of natural resource dependency each community experiences.

Idaho communities with more than 10% employment in resource-based sectors (wood products, travel & tourism, agriculture, and mining) were evaluated by Harris *et al.* (2003). Their findings indicate that Eden, Hazelton, and Jerome are categorized as an “Agriculture Only” dependent community. (Harris *et al.* 2000).

Harris *et al.* (2003) further evaluated Idaho communities based on their level of direct employment in several industrial sectors. Their findings for communities in Jerome County are summarized in Table 3.6.

Table 3.6. Levels of direct employment by industrial sector

Community	Economic Diversity Index	Agriculture	Timber	Travel and Tourism	State/Local Government	Federal Government	Mining and Minerals
Eden	Med Low	High	Low	Low	Med Low	Low	Low
Hazelton	Med Low	High	Low	Low	Med High	Low	Low
Jerome	High	Med High	Low	Med Low	Med Low	Low	Med Low

A “low” level of direct employment represents 5% or less of total employment in a given sector; “med. low,” 6 to 10%; “med. high” 11 to 19%; and “high” 20% or more of total employment in a given sector.

Source: Harris *et al.* 2000

3.3 Emergency Services & Planning and Zoning

Southern Idaho Regional Communications Center (SIRCOMM) serves as the dispatching center for all emergency 911 calls made in Jerome County. SIRCOMM offices are located in the city of Jerome. SIRCOMM has enhanced 911 service, the automated number identification and automated location identification. SIRCOMM dispatches through a highly specialized Computer Assisted Dispatch or CAD system. The system is designed to automate the flow of information through the emergency communications center. CAD systems take the initial call-for-service data, link it to pre-defined data required for the emergency response, and switch the call to the various operators in the center that are responsible for dispatching the emergency response.

SIRCOMM has developed a fire suppression subcommittee to address issues associated with fire dispatch. This sub committee is made up of representatives of the Fire Departments served by SIRCOMM. This committee meets and discusses items pertaining to the dispatching of the fire department agencies. Any operational changes that are needed are taken to the Operations Board for discussion and approval/disapproval.

The Jerome County Planning & Zoning Commission and Disaster Services recognize the need for institution of a rural addressing system and the need to adopt improved road standards for new developments throughout the county. The departments are working to ascertain the necessary equipment to initiate rural addressing to improve emergency services.

3.4 Cultural Resources

Cultural resource impacts were qualitatively assessed through a presence/absence determination of significant cultural resources and mitigation measures to be employed during potential fire mitigation activities such as thinning and prescribed fire.

The United States has a unique legal relationship with Indian tribal governments defined in history, the U.S. Constitution, treaties, statutes, Executive Orders, and court decisions. Since the formation of the union, the United States has recognized Indian tribes as domestic dependant nations under its protection. The Federal Government has enacted numerous regulations that establish and define a trust relationship with Indian tribes.

The relationship between Federal agencies and sovereign tribes is defined by several laws and regulations addressing the requirement of Federal agencies to notify or consult with Native American groups or otherwise consider their interests when planning and implementing Federal undertakings, among these are:

- **EO 13175, November 6, 2000**, Consultation and Coordination with Indian Tribal Governments.
- **Presidential Memorandum, April, 1994**. Government-Government Relations with Tribal Governments (Supplements EO 13175). Agencies must consult with federally recognized tribes in the development of Federal Policies that have tribal implications.
- **EO 13007, Sacred sites, May 24, 1996**. Requires that in managing Federal lands, agencies must accommodate access and ceremonial use of sacred sites and must avoid adversely affecting the physical integrity of these sites.
- **EO 12875, Enhancing Intergovernmental Partnerships, October 26, 1993**. Mainly concerned with unfunded mandates caused by agency regulations. Also states the intention of establishing “regular and meaningful consultation and collaboration with state, local and tribal governments on matters that significantly or uniquely affect their communities.”

- **Native American Graves Protection and Repatriation Act (NAGPRA) of 1989.** Specifies that an agency must take reasonable steps to determine whether a planned activity may result in the excavation of human remains, funerary objects, sacred objects and items of cultural patrimony from Federal lands. NAGPRA also has specified requirements for notifying and consulting tribes.
- **Archaeological Resources Protection Act (ARPA), 1979.** Requires that Federal permits be obtained before cultural resource investigations begin on Federal land. It also requires that investigators consult with the appropriate Native American tribe prior to initiating archaeological studies on sites of Native American origin.
- **American Indian Religious Freedom Act (AIRFA), 1978.** Sets the policy of the US to protect and preserve for Native Americans their inherent rights of freedom to believe, express, and exercise the traditional religions of the American Indian . . . including, but not limited to access to sacred sites, use and possession of sacred objects, and the freedom to worship through ceremonies and traditional rites.
- **National Environmental Policy Act (NEPA), 1969.** Lead agency shall invite participation of affected Federal, State, and local agencies and any affected Indian Tribe(s).
- **National Historic Preservation Act (NHPA), 1966.** Requires agencies to consult with Native American tribes if a proposed Federal action may affect properties to which they attach religious and cultural significance. (Bulletin 38 of the act, identification of TCPs, this can only be done by tribes.)
- Treaties (supreme law of the land) in which tribes were reserved certain rights for hunting, fishing and gathering and other stipulations of the treaty.
- Unsettled aboriginal title to the land, un-extinguished rights of tribes.

Table 3.7. National Register of Historic Places in Jerome County, Idaho.

Item Number	Resource Name	Address	City	Listed	Architect, Builder, or Engineer
1	Mandl, Joseph, House	800 N. Fillmore St	Jerome	1983	Pugh,H. T.
2	Lee, J.O., Honey House	5th Ave	Jerome	1983	Lee,O. J.
3	Lee, J. O., House	5th Ave	Jerome	1983	Bryant,Jeremiah, Lee,J. O
4	Lawshe, George, Well House	SE of Jerome	Jerome	1983	Vipham,H.
5	Laughlin, Ben, Water Tank House-Garage	E of Jerome	Jerome	1983	Bennett,Ed
6	Kelley, Marion and Julia, House	450 4th St	Hazelton	1983	Christopherson
7	Kehrer, Thomas J., House	N of Jerome	Jerome	1983	Pugh,H. T.
8	Keating, Clarence, House	NE of Jerome	Jerome	1983	Pugh,H. T.
9	Johnson, Edgar, House	S of Jerome	Jerome	1983	
10	Jerome National Bank	100 E. Main St	Jerome	1978	
11	Jerome First Baptist Church	1st Ave	Jerome	1983	Multiple, Pugh,H. T

Table 3.7. National Register of Historic Places in Jerome County, Idaho.

Item Number	Resource Name	Address	City	Listed	Architect, Builder, or Engineer
12	Jerome County Courthouse	N. Lincoln	Jerome	1987	Kartzke,Paul R., Sundberg & Sundberg
13	Jerome Cooperative Creamery	313 S. Birch St	Jerome	1983	Pugh,H. T.
14	Jerome City Pump House	600 Block of E. B St	Jerome	1983	Bennett,Ed, Pugh,H. T.
15	Huer Well House/Water Tank	NE of Jerome	Jerome	1983	Pugh,H. T.
16	Hazelton Presbyterian Church	310 Park Ave	Hazelton	1991	Cooper,M.A.
17	Havens, Bert and Fay, House	N of Hazelton	Hazelton	1983	Kilgore,Fred, Havens,Fay
18	Gregg, Edward M., Farm	SE of Jerome	Jerome	1983	Duffy,Brannock, Grant,R. W.
19	Goff, Hugh and Susie, House	NE of Jerome	Jerome	1983	Cox,Marland
20	Gleason, F. C. House	209 E. Ave. A	Jerome	1983	Pugh,H. T.
21	Fry, Merrit, Farm	W of Jerome	Jerome	1983	Pugh,H. T.
22	Falls City School House	SE of Jerome	Jerome	1983	Wulff,Maurice, Pugh,H. T.
23	Erdman, G. H., House	W of Jerome	Jerome	1983	Otis Brothers
24	Epperson, George, House	SE of Jerome	Jerome	1983	Epperson,George & Sons
25	Dunn, William S., House	360 Park Ave	Hazelton	1983	
26	Doughty, George V., House and Garage	NE of Jerome	Jerome	1983	Pugh,H. T.
27	Daniels, O. J., House	S of Jerome	Jerome	1983	Cox,Marland
28	Cooke, E. V., House	NE of Jerome	Jerome	1983	Pugh,H. T.
29	Cook, William H., Water Tank	SE of Jerome	Jerome	1983	
30	Canyonside School	S of Jerome	Jerome	1983	Kartske,Paul R., Pugh,H. T.
31	Callen, Dick, House	S of Jerome	Jerome	1983	Otis
32	Caldron Linn	2 mi. E of Murtaugh	Murtaugh	1972	
33	Brick, Frank J., House	300 N. Fillmore St	Jerome	1983	Pugh,H. T.
34	Bower, Charles, House	N of Jerome	Jerome	1983	Pugh,H. T.
35	Bothwell, James, Water Tank	N of Jerome	Jerome	1983	Gott,John
36	Blessing, Carl, Outbuildings	NW of Jerome	Jerome	1983	Blessing,Carl
37	Bethune-Ayres House	E of Jerome	Jerome	1983	
38	Barnes, Tom, Barn	E of Jerome	Jerome	1983	
39	Bacon, T. C., Water Tank and Well House	Off SR 93	Jerome	1983	Duffy,Pete
40	Allton Building	160 E. Main St	Jerome	1983	
41	Graves, Lulu, Farm	NW of Jerome	Jerome	1983	Pugh,H. T.

Table 3.7. National Register of Historic Places in Jerome County, Idaho.

Item Number	Resource Name	Address	City	Listed	Architect, Builder, or Engineer
42	Milner Dam and the Twin Falls Main Canal	Twin Falls Main Canal between Murtaugh and Milner Lakes	Jerome	1986	
43	Minidoka Internment National Monument	Hunt Rd	Hunt	1979	
44	Newman, J. W. and Rachel, House and Bunkhouse	E of Jerome	Jerome	1983	Darrah,Bill
45	North Side Canal Company Slaughter House	NE of Jerome	Jerome	1983	
46	Osborne, Jessie, House	W of Jerome	Jerome	1983	Kartsy,Paul, Pugh,H. T.
47	Ploss, A. G., House	W of Jerome	Jerome	1983	McIntyre,J.P., Long,J.C.
48	Quay, Greer and Jennie, House	NE of Jerome	Jerome	1983	
49	Ricketts, Julian T., House	SE of Jerome	Jerome	1983	Multiple
50	Schmerschall, John F., House	248 E. Ave. A	Jerome	1983	Pugh,H. T.

Hazard mitigation activities in and around these sites has the potential to affect historic places. In all cases, mitigation work will be intended to reduce the potential of damaging the site due to natural and man caused disasters. Areas where ground disturbance will occur will need to be inventoried depending on the location. Plans for development of an interpretative center at the Minidoka Internment National Monument will need to consider the impact increased visitation may have on fire management. The historic value of National Monument needs to be considered when planning and prioritizing mitigation activities in the area.

3.5 Transportation

Primary access to and from Jerome County is provided by Interstate 84 and US Highway 93, both of which are well-maintained paved roads. Interstate 84 traverses the county from east to west through the more populace areas of Jerome, Hazelton, and Eden. US 93 enters the County via the Perrine Bridge across the Snake River and travels north to Shoshone in Lincoln County. State Highways 25 and 50 also offer paved connections between communities. Smaller roads (many gravel) provide access to the adjoining areas within the county. A variety of trails and unimproved roads are to be found throughout Jerome County, particularly in the northeastern region.

Many of the roads in the county were originally built to facilitate ranching and farming activities. As such, they can support trucks, farming equipment, and fire fighting equipment referenced in this document. However, many of the new roads have been built for home site access only, without consideration of emergency vehicle access. In many cases, these roads are adequate to facilitate movement equipment. However, there are notable exceptions along the Snake River south of Jerome as well as in rural areas throughout the county.

3.6 Vegetation & Climate

Vegetation in Jerome County is primarily agricultural or rangeland ecosystems. An evaluation of satellite imagery of the region provides some insight to the composition of the vegetation of the area. The full extent of the county was evaluated for cover type as determined from Landsat 7 ETM+ imagery in tabular format, Table 3.8.

The most represented vegetated cover type is agriculture at approximately 55% of the County's total area. Perennial Grasslands are the second most common plant cover type at 31% of the county's total area. Basin & Wyoming Big Sagebrush represent approximately 11% of the total (Table 3.8).

Table 3.8. Cover Types in Jerome County		Percent of County's Total Area
	Acres	
Agricultural Land	210,242	54.6%
Perennial Grassland	120,894	31.4%
Basin & Wyoming Big Sagebrush	43,866	11.4%
Low Intensity Urban	2,238	0.6%
Low Sagebrush	1,827	0.5%
Rabbitbrush	1,762	0.5%
Shrub Dominated Riparian	1,268	0.3%
Water	1,064	0.3%
Shrub/Steppe Annual Grass-Forb	1,033	0.3%
Wet Meadow	435	0.1%
Perennial Grass Slope	244	0.1%
Foothills Grassland	99	0.0%
Mixed Barren Land	94	0.0%
Disturbed, Low	67	0.0%
Broadleaf Dominated Riparian	65	0.0%
Mountain Big Sagebrush	42	0.0%
Deep Marsh	35	0.0%
Exposed Rock	30	0.0%
Disturbed, High	28	0.0%
Shallow Marsh	24	0.0%
Graminoid or Forb Dominated Riparian	8	0.0%

Vegetative communities within the county follow the strong moisture and temperature gradient related to the major river drainages. Limited precipitation and soil conditions result in a relatively arid vegetated environment.

3.6.1 Rangeland

Rangeland is generally divided into winter, spring/fall, and summer range depending upon elevation and location. Over 40% of land in Jerome County are classified as rangeland. The Bureau of Land Management (BLM) and State of Idaho administer the majority of the public lands in the County. Range fires occur frequently in the Snake River Plains during summer. When this happens the land is usually seeded to select grasses in the fall so better forage cover is obtained.

3.6.2 Monthly Climate Summaries in Jerome County

3.6.2.1 Craters of the Moon (102260)

Period of Record Monthly Climate Summary

Period of Record : 12/1/1958 to 3/31/2004

Table 3.9 Climate records for Craters of the Moon National Monument.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	28.8	33.7	41.7	53.3	64.7	74.5	84.6	82.9	71.8	59.2	40.4	29.9	55.5
Average Min. Temperature (F)	10.4	14.0	20.7	28.3	37.0	44.7	52.2	50.4	41.1	31.4	20.5	11.4	30.2
Average Total Precipitation (in.)	2.12	1.57	1.23	1.09	1.65	1.22	0.68	0.84	0.84	0.86	1.34	1.90	15.34
Average Total SnowFall (in.)	22.0	17.4	9.2	5.2	2.1	0.0	0.0	0.0	0.4	1.6	10.7	20.5	89.2
Average Snow Depth (in.)	20	25	18	3	0	0	0	0	0	0	2	11	7

Percent of possible observations for period of record. Max. Temp.: 95.2% Min. Temp.: 95.5%
Precipitation: 96.6% Snowfall: 95.7% Snow Depth: 91.9%

3.6.2.2 Jerome, Idaho (105972)

Period of Record Monthly Climate Summary

Period of Record : 10/1/1966 to 4/30/1988

Table 3.10 Climate records for Jerome, Idaho (Jerome County).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	32.3	39.6	48.7	58.3	67.3	77.4	87.1	85.7	75.2	63.2	45.9	35.6	59.7
Average Min. Temperature (F)	12.5	17.7	23.6	29.1	36.7	43.6	49.1	45.9	37.2	28.7	22.3	15.5	30.2
Average Total Precipitation (in.)	1.08	0.84	0.90	0.86	1.10	0.90	0.42	0.29	0.68	0.69	0.93	0.80	9.49
Average Total SnowFall (in.)	5.9	3.2	3.7	1.2	0.4	0.0	0.0	0.0	0.0	0.1	2.2	6.0	22.7
Average Snow Depth (in.)	1	1	1	0	0	0	0	0	0	0	0	1	0

Percent of possible observations for period of record. Max. Temp.: 78.5% Min. Temp.: 78.5%
Precipitation: 81.3% Snowfall: 78.9% Snow Depth: 71.2%

3.6.2.3 Jerome Dam, Idaho (105980)

Period of Record Monthly Climate Summary

Period of Record : 5/ 2/1947 to 3/31/2004

Table 3.11 Climate records for Jerome Dam, Idaho (Jerome County).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	34.4	40.4	49.5	59.3	68.8	78.3	88.1	86.9	76.9	63.9	46.9	36.3	60.8
Average Min. Temperature (F)	16.5	20.7	26.8	33.2	41.3	48.7	55.5	54.1	45.4	35.6	26.7	19.1	35.3
Average Total Precipitation (in.)	1.02	0.74	0.85	0.89	1.11	0.86	0.31	0.44	0.58	0.65	0.97	0.96	9.39
Average Total SnowFall (in.)	7.6	4.0	3.0	1.0	0.2	0.0	0.0	0.0	0.0	0.5	2.5	5.9	24.7
Average Snow Depth (in.)	2	2	1	0	0	0	0	0	0	0	0	1	0

Percent of possible observations for period of record. Max. Temp.: 96.6% Min. Temp.: 96.6%
Precipitation: 96.6% Snowfall: 96% Snow Depth: 95.1%

3.6.2.4 Paul, Idaho (106877)

Period of Record Monthly Climate Summary

Period of Record : 8/ 1/1948 to 3/31/2004

Table 3.12 Climate records for Paul, Idaho (Jerome County).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	35.3	41.5	50.0	59.4	68.6	77.8	87.4	86.6	76.4	64.0	47.7	37.4	61.0
Average Min. Temperature (F)	16.8	21.1	26.2	32.2	40.3	47.3	53.0	50.6	41.8	32.6	25.1	18.7	33.8
Average Total Precipitation (in.)	1.04	0.75	0.82	0.86	1.25	0.92	0.36	0.43	0.58	0.67	0.96	1.00	9.63
Average Total SnowFall (in.)	5.7	2.6	2.0	0.9	0.3	0.0	0.0	0.0	0.0	0.2	1.9	5.1	18.8
Average Snow Depth (in.)	1	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record. Max. Temp.: 99.3% Min. Temp.: 99.4%
Precipitation: 99.3% Snowfall: 98.1% Snow Depth: 93.5%

3.7 Wildfire Hazard Profiles

3.7.1 Wildfire Ignition Profile

Fire was once an integral function of the majority of ecosystems in Idaho. The seasonal cycling of fire across the landscape was as regular as the July, August and September lightning storms plying across the canyons and mountains. Depending on the plant community composition, structural configuration, and buildup of plant biomass, fire resulted from ignitions with varying intensities and extent across the landscape. Shorter return intervals between fire events often

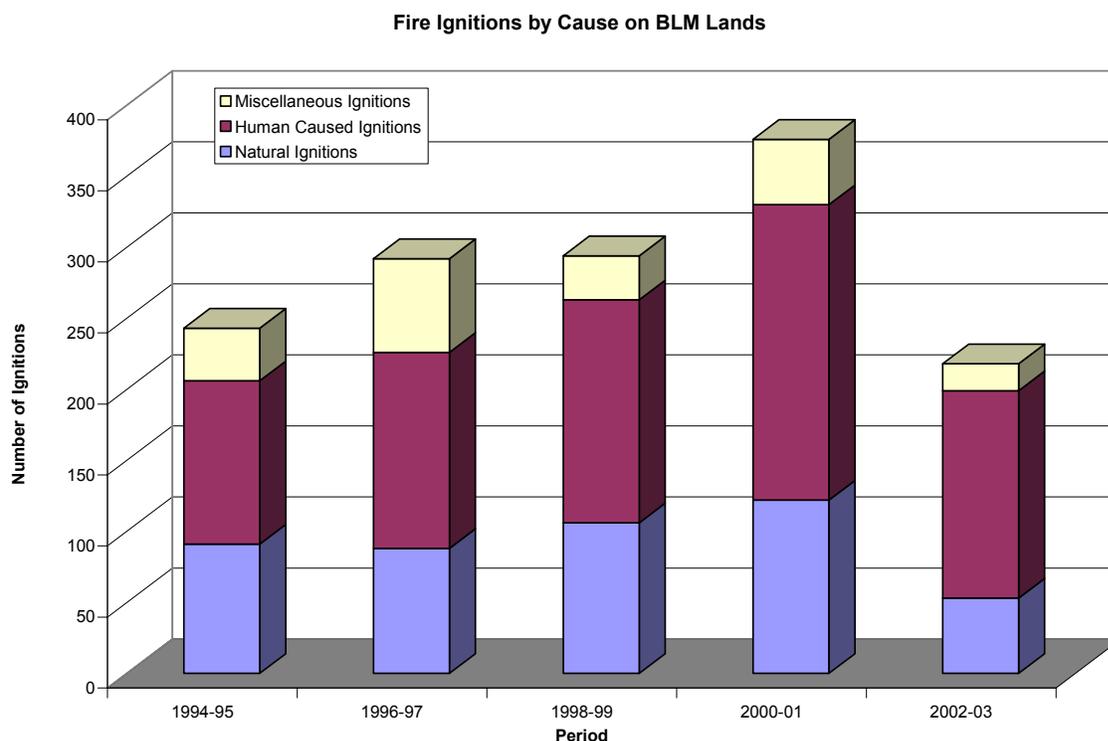
resulted in less dramatic changes in plant composition (Johnson 1998). The fires burned from 1 to 47 years apart, with most at 5- to 20-year intervals (Barrett 1979). With infrequent return intervals, plant communities tended to burn more severely and be replaced by vegetation different in composition, structure, and age (Johnson *et al.* 1994). Native plant communities in this region developed under the influence of fire, and adaptations to fire are evident at the species, community, and ecosystem levels. Fire history data (from fire scars and charcoal deposits) suggest fire has played an important role in shaping the vegetation in the Columbia Basin for thousands of years (Steele *et al.* 1986, Agee 1993).

Detailed records of fire ignition and extent have been compiled by the Bureau of Land Management, Upper Snake River District. The following (Table 3.13) is a summary of fire ignitions as recorded by the Bureau of Land Management Upper Snake River for the period 1983-2002.

Table 3.13. Wildfire ignitions recorded by the Bureau of Land Management Upper Snake River District 1994-2003.

Cause	Cause Code	1994-95	1996-97	1998-99	2000-01	2002-03	% of Ignitions
Natural	1	91	88	106	122	53	28.9%
Campfires	2	4	4	2	7	6	1.4%
Smoking	3	1	0	1	1	2	0.3%
Fire Use	4	20	27	30	11	15	6.5%
Incendiary	5	6	1	5	27	12	3.2%
Equipment	6	28	20	51	81	46	14.2%
Railroads	7	17	18	26	18	13	5.8%
Juveniles	8	2	2	7	9	4	1.5%
Miscellaneous	9	37	66	31	46	19	12.5%
Non-Specific Human Caused		0	0	4	8	29	2.6%
Sub-Total (All Human Caused)		115	138	157	208	146	48.0%
Not Classified		77	110	110	45	27	
Total All Fire Ignitions		283	336	373	375	226	

Figure 3.1. Bureau of Land Management Upper Snake River Wildfire Ignition Profile.



The available data would indicate that lightning caused ignitions accounted for between 30% and 40% of total ignitions in the two datasets. The remaining 60%-70% of ignitions have been human caused.

3.7.2 Wildfire Extent Profile

Data on wildfire extent has been collected in Jerome County by Bureau of Land Management since 1970. Within Jerome County, the data indicates that approximately 166,000 acres have burned between 1970 and 2003 during large fire events. Figure 3.2 summarizes the number of large fires according to the number of acres burned in that event. Almost two-thirds (63%) of the large fires in the county have been contained under 200 acres. Approximately 16% have grown to 500 acres, 8% to 1,000 acres, 5% to 2,000 acres, and 6% have grown to 10,000 acres. The remaining 1% of all large fires (3 total) have grown to over 10,000 acres with the Railroad Mile Post 304 fire hitting 27,027 acres (1981), the High Point Fire burning 13,022 acres (2000), and the Bacon Pond Fire scorching 11,071 acres (2001) topping the list of largest fires in Jerome County (Table 3.14).

Table 3.14. Wildfire Extent Profile for Jerome County, data provided by BLM Upper Snake River District 1970-2003.

YEAR	FIRE NAME	LATITUDE	LONGITUDE	ACRES
1970	Burgess			86
1970	Eden Dump			144
1970	Eden North 6			2,023
1970	Eden NW 3			2,016
1970	Eden NW 4			60
1970	Freeway Fire			664

Table 3.14. Wildfire Extent Profile for Jerome County, data provided by BLM Upper Snake River District 1970-2003.

YEAR	FIRE NAME	LATITUDE	LONGITUDE	ACRES
1970	Hansen Bridge North			262
1970	Milner Canal			84
1970	Shoshone Falls			90
1971	Barn Fire			304
1971	Blue Lakes 2			23
1971	Box			12
1971	Burned Car			43
1971	Canyon Rim			468
1971	Devils Corral 2			22
1971	Devils Corral 3			42
1971	Devils Corral 4			955
1971	Eden West			50
1971	Golf Course			83
1971	Hazelton East 5			11
1971	Hazelton NW 2.5			114
1971	Hazelton Rapids			20
1971	Jerome CCE 2			250
1971	Jerome Highway			241
1971	Jerome North 8			120
1971	Jerome NW 6			77
1971	Notch Butte South			7,488
1971	Pond			218
1971	Prescott			221
1971	Substation			1,317
1971	Tin Can Lake			90
1972	Burn Car			232
1972	Canyon Club North 2			246
1972	County Line 93			108
1972	Devils Corral			131
1972	Eden Dump			1,174
1972	Kimama East			1,039
1972	Stage Barn SE 5			183
1973	Barry	42.6330	113.4670	870
1973	Devils Corral 2	42.6000	114.4170	1,539
1973	Devils Corral 3	42.6500	114.3000	255
1973	Ditch	42.8330	114.3330	20
1973	Dynamite	42.6170	114.4500	84
1973	Eden NW	42.6330	114.2330	287
1973	Golf 1	42.6330	114.5170	14
1973	Goose Lake	42.5830	114.5000	1,418
1973	Greenwood	42.6330	114.0170	249
1973	H Dump	42.6170	114.0330	186
1973	Hazelton East	42.6000	114.1000	31

Table 3.14. Wildfire Extent Profile for Jerome County, data provided by BLM Upper Snake River District 1970-2003.

YEAR	FIRE NAME	LATITUDE	LONGITUDE	ACRES
1973	John	42.6170	114.4500	41
1973	June Grass	42.7330	113.9500	28
1973	Lickey South	42.6330	114.4500	146
1973	Notch 1	43.0330	114.4000	949
1973	Notch 2	42.8670	114.4170	4,770
1973	Perrine 2	42.6170	114.4670	61
1973	Schodde	42.5830	114.0000	169
1973	Silver	42.8170	114.5170	12
1973	Track	42.8000	114.4170	58
1973	TV Hill	42.7330	114.4170	477
1973	Wilson 2	42.6000	114.0670	2,809
1973	Wilson North	42.6170	114.1000	3,323
1974	Bacon E	42.7670	114.3330	235
1974	Hunt	42.6500	114.3170	202
1974	Hynes	42.6330	113.9830	4,026
1975	Burst	42.7500	114.2000	355
1975	DC 1	42.5830	114.4500	25
1975	Devil 2	42.6000	114.4170	9
1975	Lickley	42.6170	114.4670	23
1975	McKay	42.8670	114.4000	91
1975	Midpoint	42.8500	114.4170	4,282
1975	Pre Man	42.6670	114.2830	98
1976	1650 N	42.7670	114.0000	393
1976	B Lee	43.6000	114.4170	123
1976	Breakout	42.7330	114.2000	536
1976	Devils Corral 1	42.6330	114.4330	386
1976	Ditch	42.6330	114.2670	45
1976	Gooding S	42.8170	114.6000	188
1976	Horse Race	42.6170	114.4670	30
1976	Hunt	42.6330	114.2670	575
1976	Kimama Butte	42.7670	113.8830	380
1976	Marshall	42.8000	114.4170	8
1976	Mother	42.6000	114.4670	395
1976	Perrine	42.6170	114.4830	60
1976	Power 1	42.6000	114.2000	183
1976	Rattler	42.6330	113.9170	153
1976	Schodde W	42.6000	114.0170	108
1976	Smoky	42.6000	114.3670	127
1976	Tin Can	42.6500	114.2830	5,191
1976	TV Hill	42.7830	114.3170	169
1976	TV Hill 2	42.2330	114.4170	183
1976	Wilson Lake	42.6330	114.1830	1,113
1976	Wreck	42.6330	114.4330	65

Table 3.14. Wildfire Extent Profile for Jerome County, data provided by BLM Upper Snake River District 1970-2003.

YEAR	FIRE NAME	LATITUDE	LONGITUDE	ACRES
1977	Camp Two	42.7670	114.2330	11
1977	DC Number 1	114.4000	42.6000	196
1977	Gravel Pit	42.6330	114.3670	24
1977	Hunt	42.6500	114.2670	108
1977	Star North	42.8000	114.2170	347
1978	Bacon Pond	42.7830	114.3500	8
1978	Blue Lakes	42.6170	114.4830	7
1978	Brockman	42.6500	114.4500	39
1978	Crestview	42.6330	114.0000	73
1978	Eden N1	42.6170	114.1500	64
1978	I80 East	42.6330	114.4170	7
1978	Sunday	42.6670	114.4000	440
1979	Bacon P 2	42.7830	114.3670	1,728
1979	Bacon P 3	42.6170	114.3170	106
1979	Bacon P 4	42.6170	114.3330	230
1979	BL CC 2	42.6000	114.4670	131
1979	Flat Top	42.7500	114.4170	50
1979	Frisch	42.6000	114.4670	163
1979	Gravel Pit	42.6500	114.2500	313
1979	Hi Point	42.6830	114.1330	4,317
1979	I80 MP178	42.6170	114.3500	1,051
1979	I80 MP179	42.6170	114.3500	178
1979	Midpoint	42.8330	114.4170	49
1979	Wilson Lake	42.6330	114.1500	357
1980	Devil C	42.6170	114.4000	71
1980	Greenwood	42.6330	113.9830	1,495
1980	I84 MP176	42.6170	114.3830	15
1980	Schodde	42.5000	113.9830	937
1981	Antelope	42.6330	113.9500	395
1981	Blue Lake 2	42.6000	114.4670	125
1981	Camp 3	42.7170	114.2170	415
1981	Canyon	42.6170	114.4830	115
1981	Goose Dump	42.6000	114.2670	26
1981	Goose Lake	42.6500	114.2830	6,822
1981	Haystack	42.7000	113.8000	36
1981	Haystack 2	42.7000	113.8000	798
1981	Junction	42.6330	114.4330	120
1981	Make Out	42.6330	114.4830	23
1981	RR MP304	42.9000	114.0670	27,027
1981	Twenty Six	42.7500	114.1670	2,096
1981	Wendell Well	42.8330	114.7000	585
1982	Cinder Butte	42.7000	114.0830	3,498
1983	93 MP59.8E	42.4500	114.2600	37

Table 3.14. Wildfire Extent Profile for Jerome County, data provided by BLM Upper Snake River District 1970-2003.

YEAR	FIRE NAME	LATITUDE	LONGITUDE	ACRES
1983	Bacon Lake	42.3800	114.2100	249
1983	Camp Three	42.4100	114.1100	342
1983	Corral #2	42.3700	114.2300	148
1983	Corral #3	42.3500	114.2000	61
1983	Corral #4	42.3500	114.2100	27
1983	Corral 6	42.3800	114.2800	57
1983	Eagle	42.4100	114.0200	595
1983	Hunt 2	42.4000	114.1700	9
1983	I84 MP174S	42.3800	114.2600	461
1983	Jerome NW	42.4900	114.3500	13
1983	Junk	42.3800	114.2800	13
1983	Pump Station	42.4700	114.2100	43
1983	Rec 6	42.3700	114.0000	237
1983	Spud Cellar	42.4300	114.0000	31
1983	Star Lake	42.4900	114.1100	888
1983	Wilson Butte	42.4800	114.1400	62
1984	Blue Lake 4	42.3700	114.2800	10
1984	D.C. Road	42.3700	114.2600	19
1984	Eden 6N	42.4100	114.1200	6
1984	I84 MP178N	42.3700	114.2100	2,167
1984	Wendell NE	42.5000	114.3500	464
1984	Wendell NE6	42.4900	113.3500	576
1984	Wilson Lake	42.3800	114.0700	275
1985	DC 1	42.6170	114.4330	454
1985	Eden NE	42.6170	114.2000	128
1985	H25 MP16 3E2	42.6330	114.2500	1,441
1985	Hidden Valley West	42.7830	114.0170	23
1985	Jerome 6N5W	42.8170	114.6000	43
1985	Powerline North	42.8500	114.5830	21
1985	Powerline South	42.8330	114.5830	26
1986	1650 E3	42.7330	113.9670	11
1986	Big Brush	42.6830	114.0170	71
1986	I84 MP178N	42.6330	114.3500	18
1986	Murtaugh	42.5000	114.1330	107
1986	Wilson 2N	42.6330	114.1170	283
1987	Five by Five	42.7830	114.6000	30
1987	Goose Lake	42.6170	114.2330	22
1987	Hunt	42.6670	114.2500	63
1987	Jerome 6E	42.7330	114.4170	2
1987	McKay	42.8170	114.4000	36
1987	Milner	42.5330	113.9670	1
1987	Red Bridge	42.7670	114.2830	32
1988	Eden Dump	42.6170	114.1670	151

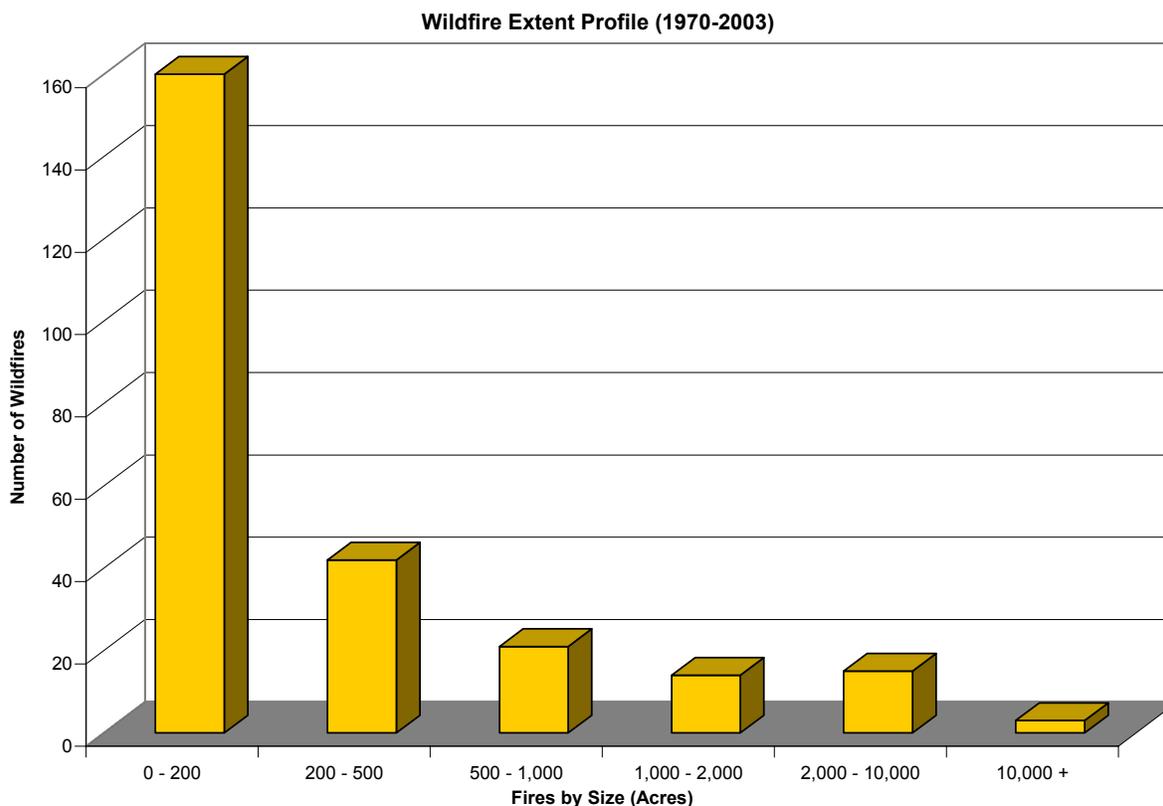
Table 3.14. Wildfire Extent Profile for Jerome County, data provided by BLM Upper Snake River District 1970-2003.

YEAR	FIRE NAME	LATITUDE	LONGITUDE	ACRES
1988	Emberton	42.6170	114.4500	14
1988	I84 MP174N	42.6330	114.3670	28
1989	300 North	42.6667	113.9667	470
1989	I84 MP173	42.6500	114.4330	514
1989	I84 MP180SW	42.6000	114.3330	186
1989	Jerome Landfill	42.7670	114.4170	56
1989	Kimama 9SW	42.7000	114.0330	63
1989	Union Pacific Perrine	42.6670	114.3170	2
1990	Hazel One	42.6000	114.0830	1
1990	No Access	42.6500	114.6000	10
1990	Perrine Bridge	42.6000	114.4500	42
1991	Twin Falls	42.6000	114.3500	6
1992	HWY25 MP15W	42.6500	114.3000	81
1992	Substation	42.6330	114.2170	25
1992	TV Hill	42.7330	114.4170	66
1993	Eden 8N	42.7170	114.2000	23
1994	Stewart	42.7000	114.3000	185
1994	US93 MP51W	42.6170	114.4500	1
1995	1550W 570N	42.7170	113.9830	1,439
1995	1650W550S	41.6300	113.9830	527
1995	5 By 5	42.8670	114.6000	108
1995	Camp One	42.8330	114.2670	9
1995	Canal	42.9830	114.5830	116
1995	Hines	42.6170	113.9170	612
1995	Kimama	42.7670	113.9670	350
1995	North Murtaugh	42.5000	114.1500	29
1995	Schodde	42.6170	113.9830	78
1995	Schodde No 2	42.6330	113.9830	256
1995	Schodde North	42.6830	114.0000	916
1996	Camp 2	42.7670	114.2170	879
1996	Golf C Road	42.6170	114.4670	23
1996	Kimama S	42.7000	113.9330	136
1996	Redbridge	43.5500	114.3670	155
1996	Schodde	42.5830	113.8670	542
1996	Sugarloaf E	42.7000	114.3170	25
1996	West Schodde	42.6000	114.0170	30
1997	Petroe1	42.6200	114.4000	168
1997	Schaeffer	42.7170	113.9700	43
1998	Camp III			290
1998	Crestview 1			19
1998	High Point			785
1998	HighPoint2			1,030
1998	N Milner 1			21

Table 3.14. Wildfire Extent Profile for Jerome County, data provided by BLM Upper Snake River District 1970-2003.

YEAR	FIRE NAME	LATITUDE	LONGITUDE	ACRES
1998	Schodde			106
1998	TF East			11
1998	US98MP65W			68
1999	Crestview			21
1999	DevilsCor2			79
1999	I84MP177			11
1999	I84MP177EA			15
1999	I84MP177WE			10
1999	Kimama Butte			164
1999	Redbridge II			1,136
1999	REDBRIDGE1			135
1999	WarmSprings			48
1999	WilsonBt			1,685
2000	1W SHO FALLS			47
2000	2E HIDDEN VALLEY RD			125
2000	4 EAST PETRO			114
2000	93 JUNCTION			278
2000	HIGH POINT			13,022
2000	N HAZELTON			94
2000	SILVER PK RD			42
2000	WEST HIGH POINT			45
2001	BACON POND	42.6472	114.4211	11,071
2001	DEVILS CORRAL			648
2001	HUNT			16
2001	HYNES WEST	42.6177	113.9300	305
2001	I84MP175	42.6289	114.4089	289
2001	RED RIDGE	42.7747	114.4011	23
2001	SCHODDE 1	42.6331	113.9411	2,184
2001	SUBSTATION	42.8386	114.4567	123
2001	WEST KIMAMA	42.7150	113.9564	41
2001	WILSON BUTTE	42.7867	114.2386	160
2002	STAR LAKE	42.7528	114.2094	8
2003	HWY 25 MM17	42.6344	114.2619	872
2003	KIMAMA	42.7283	113.9814	86

Figure 3.2. Wildfire Extent Profile in Jerome County, 1970-2003.



Across the west, wildfires have been increasing in extent and cost of control. The National Interagency Fire Center (2003) reports nearly 88,500 wildfires in 2002 burned a total of nearly 7 million acres and cost \$1.6 billion (Table 3.15). By most informed accounts, the 2003 totals will be significantly higher in terms of acres burned and cost.

Table 3.15. National Fire Season 2002 Summary

Number of Fires (2002 final)	88,458
10-year Average (1992-2001)	103,112
Acres Burned (2002 final)	* 6,937,584
10-year Average (1992-2001)	4,215,089
Structures Burned (835 primary residences, 46 Commercial buildings, 1500 outbuildings)	2,381
Estimated Cost of Fire Suppression (Federal agencies only)	\$ 1.6 billion

- *This figure differs from the 7,184,712 acres burned estimate provided by the National Interagency Coordination Center (NICC). The NICC estimate is based on information contained in geographic area and incident situation reports prepared at the time fires occurred. The 6,937,584 estimate is based on agency end-of-year reports.*

The National Interagency Fire Center, located in Boise, Idaho, maintains records of fire costs, extent, and related data for the entire nation. Tables 3.16 and 3.17 summarize some of the relevant wildland fire data for the nation, and some trends that are likely to continue into the future unless targeted fire mitigation efforts are implemented and maintained in areas like Jerome County.

Table 3.16. Total Fires and Acres 1960 - 2002 Nationally

These figures are based on end-of-year reports compiled by all wildland fire agencies after each fire season, and are updated by March of each year. The agencies include: Bureau of Land Management, Bureau of Indian Affairs, National Park Service, US Fish and Wildlife Service, USDA Forest Service and all State Lands.

Year	Fires	Acres	Year	Fires	Acres
2002	88,458	* 6,937,584	1980	234,892	5,260,825
2001	84,079	3,555,138	1979	163,196	2,986,826
2000	122,827	8,422,237	1978	218,842	3,910,913
1999	93,702	5,661,976	1977	173,998	3,152,644
1998	81,043	2,329,709	1976	241,699	5,109,926
1997	89,517	3,672,616	1975	134,872	1,791,327
1996	115,025	6,701,390	1974	145,868	2,879,095
1995	130,019	2,315,730	1973	117,957	1,915,273
1994	114,049	4,724,014	1972	124,554	2,641,166
1993	97,031	2,310,420	1971	108,398	4,278,472
1992	103,830	2,457,665	1970	121,736	3,278,565
1991	116,953	2,237,714	1969	113,351	6,689,081
1990	122,763	5,452,874	1968	125,371	4,231,996
1989	121,714	3,261,732	1967	125,025	4,658,586
1988	154,573	7,398,889	1966	122,500	4,574,389
1987	143,877	4,152,575	1965	113,684	2,652,112
1986	139,980	3,308,133	1964	116,358	4,197,309
1985	133,840	4,434,748	1963	164,183	7,120,768
1984	118,636	2,266,134	1962	115,345	4,078,894
1983	161,649	5,080,553	1961	98,517	3,036,219
1982	174,755	2,382,036	1960	103,387	4,478,188
1981	249,370	4,814,206			

(National Interagency Fire Center 2003)

Table 3.17. Suppression Costs for Federal Agencies Nationally

Year	Bureau of Land Management	Bureau of Indian Affairs	Fish and Wildlife Service	National Park Service	USDA Forest Service	Totals
1994	\$98,417,000	\$49,202,000	\$3,281,000	\$16,362,000	\$678,000,000	\$845,262,000
1995	\$56,600,000	\$36,219,000	\$1,675,000	\$21,256,000	\$224,300,000	\$340,050,000
1996	\$96,854,000	\$40,779,000	\$2,600	\$19,832,000	\$521,700,000	\$679,167,600
1997	\$62,470,000	\$30,916,000	\$2,000	\$6,844,000	\$155,768,000	\$256,000,000
1998	\$63,177,000	\$27,366,000	\$3,800,000	\$19,183,000	\$215,000,000	\$328,526,000
1999	\$85,724,000	\$42,183,000	\$4,500,000	\$30,061,000	\$361,000,000	\$523,468,000
2000	\$180,567,000	\$93,042,000	\$9,417,000	\$53,341,000	\$1,026,000,000	\$1,362,367,000
2001	\$192,115,00	\$63,200,000	\$7,160,000	\$48,092,000	\$607,233,000	\$917,800,000
2002	\$204,666,000	\$109,035,000	\$15,245,000	\$66,094,000	\$1,266,274,000	\$1,661,314,000

(National Interagency Fire Center 2003)

Although many very large fires, growing to over 250,000 acres have burned throughout southern Idaho, the vast majority of fires in Jerome County have usually been controlled at much smaller extents. This is not to imply that wildfires are not a concern in this county, but to point to the aggressive and professional manner to which the wildland and rural fire districts cooperate in controlling these blazes. The rural fire districts, including Jerome County and West End Fire Protections Districts provide primary wildland fire suppression throughout their district boundaries. Rural districts work in close collaboration with the Upper Snake River BLM. The BLM maintains mutual aid agreements with all rural districts. Quick initial attack by rural district resources coupled with the sizable capabilities of the BLM help to reduce the occurrence of large wildland fires in the county.

3.8 Analysis Tools and Techniques to Assess Fire Risk

Jerome County and the adjacent counties of Minidoka and Twin Falls Counties, were analyzed using a variety of techniques, managed on a GIS system (ArcGIS 8.2). Physical features of the region were represented by data layers including roads, streams, soils, elevation, and remotely sensed images from the Landsat 7 ETM+ satellite. Field visits by specialists from Northwest Management, Inc. were assisted by fire suppression personnel from rural districts and the BLM. The incorporation of local knowledge into the assessment process provided insight in identifying risk factors and developing treatment options.

This information was analyzed and combined to develop an assessment of wildland fire risk in the region.

3.8.1 Fire Prone Landscapes

Schlosser *et al.* 2002, developed a methodology to assess the location of fire prone landscapes on forested and non-forested ecosystems in the western US. The goal of developing the Fire Prone Landscapes analysis is to make inferences about the relative risk factors across large

geographical regions (multiple counties) for wildfire spread. This analysis uses the extent and occurrence of past fires as an indicator of characteristics for a specific area and their propensity to burn in the future. Concisely, if a certain combination of vegetation cover type, canopy closure, aspect, slope, stream and road density have burned with a high occurrence and frequently in the past, then it is reasonable to extrapolate that they will have the same tendency in the future, unless mitigation activities are conducted to reduce this potential.

The analysis for determining those landscapes prone to wildfire utilized a variety of sources.

Digital Elevation: Digital elevation models (DEM) for the project used USGS 10 meter DEM data provided at quarter-quadrangle extents. These were merged together to create a continuous elevation model of the analysis area.

The merged DEM file was used to create two derivative data layers; aspect and slope. Both were created using the spatial analyst extension in ArcGIS 8.2. Aspect data values retained one decimal point accuracy representing the cardinal direction of direct solar radiation, represented in degrees. Slope was recorded in percent and also retained one decimal point accuracy.

Remotely Sensed Images: Landsat 7 Enhanced Thematic Mapper (ETM+) images were used to assess plant cover information and percent of canopy cover. The Landsat ETM+ instrument is an eight-band multi-spectral scanning radiometer capable of providing high-resolution image information of the Earth's surface. It detects spectrally-filtered radiation at visible, near-infrared, short-wave, and thermal infrared frequency bands from the sun-lit Earth. Nominal ground sample distances or "pixel" sizes are 15 meters in the panchromatic band; 30 meters in the 6 visible, near and short-wave infrared bands; and 60 meters in the thermal infrared band.

The satellite orbits the Earth at an altitude of approximately 705 kilometers with a sun-synchronous 98-degree inclination and a descending equatorial crossing time of 10 a.m. daily.

Image spectrometry has great application for monitoring vegetation and biophysical characteristics. Vegetation reflectance often contains information on the vegetation chlorophyll absorption bands in the visible region and the near infrared region. Plant water absorption is easily identified in the middle infrared bands. In addition, exposed soil, rock, and non-vegetative surfaces are easily separated from vegetation through standard hyper-spectral analysis procedures.

Two Landsat 7 ETM images were obtained to conduct hyper-spectral analysis for this project. The first was obtained in 1998 and the second in 2002. Hyper-spectral analysis procedures followed the conventions used by the Idaho Vegetation and Land Cover Classification System, modified from Redmond (1997) and Homer (1998).

Riparian Zones: Riparian zones were derived from stream layers created during the Interior Columbia Basin Ecosystem Management Project (Quigley *et al.* 2001).

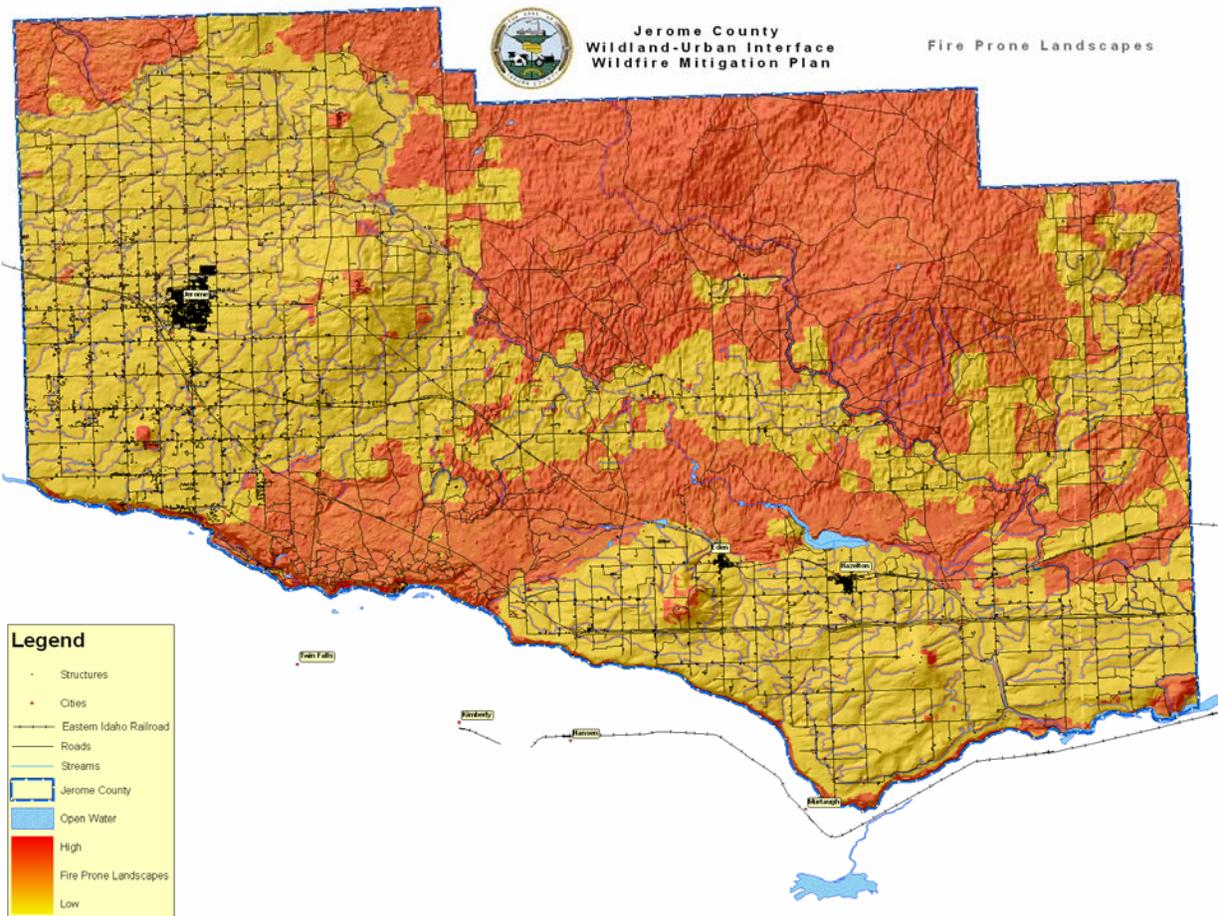
Wind Direction: Wind direction and speed data detailed by monthly averages was used in this project to better ascertain certain fire behavior characteristics common to large fire events. These data are spatially gridded Average Monthly Wind Directions in Idaho. The coverage was created from data summarized from the Interior Columbia Basin Ecosystem Management Project (Quigley *et al.* 2001).

Past Fires: Past fire extents represent those locations on the landscape that have previously burned during a wildfire. Past fire extent maps were obtained from a variety of sources for the central Idaho area including the Bureau of Land Management.

Fire Prone Landscapes: Using the methodology developed by Schlosser *et al.* (2002), and refined for this project, the factors detailed above were used to assess the potential for the landscape to burn during the fire season in the case of fire ignition. Specifically, the entire region

was evaluated at a resolution of 10 meters (meaning each pixel on the screen represented a 10 meter square on the ground) to determine the propensity for a particular area (pixel) to burn in the case of a wildfire. The analysis involved creating a linear regression analysis within the GIS program structure to assign a value to each significant variable, pixel-by-pixel. The analysis ranked factors from 0 (little to no risk) to 100 (extremely high risk) based on past fire occurrence. In fact, the maximum rating score for Jerome County was 86 with a low of 10.

Figure 3.3 Fire Prone Landscapes in Jerome County.



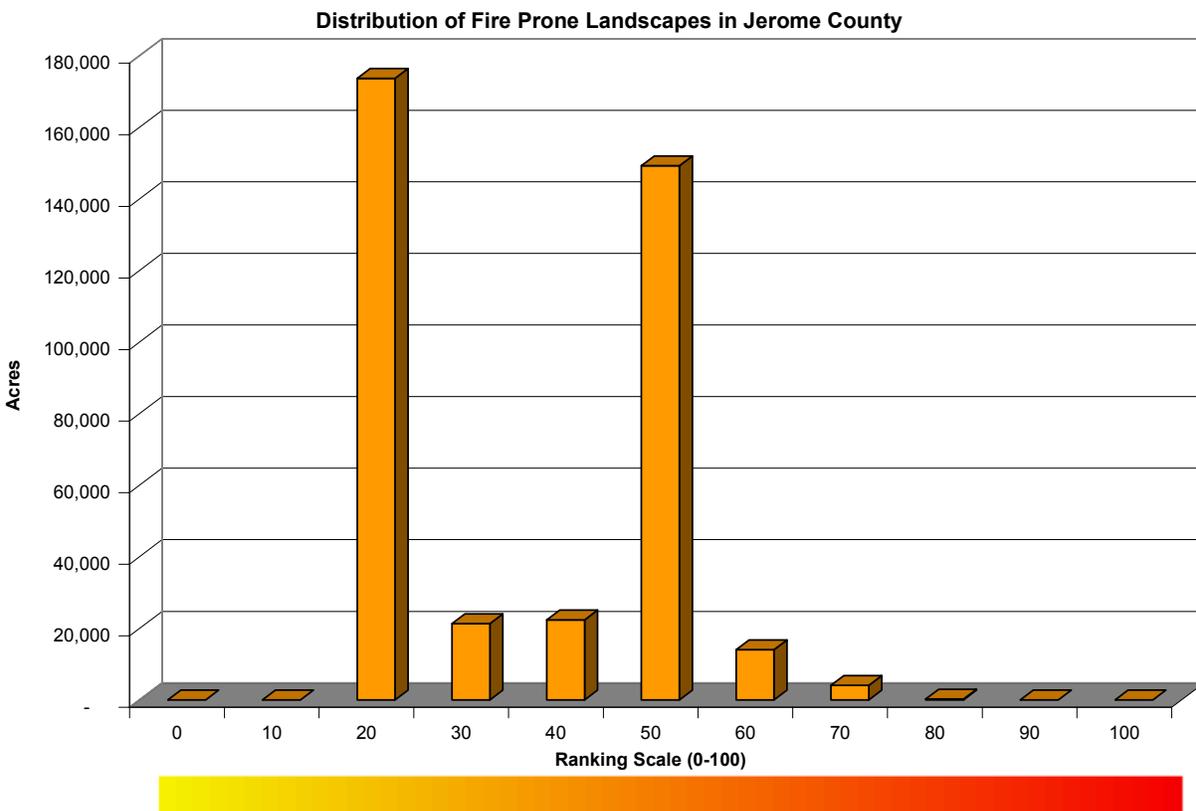
This map is presented for reference in this section of the plan. This map, and additional maps are detailed in Appendix I.

The maps depicting these risk categories display yellow as the lowest risk and red as the highest with values between a constant gradient from yellow to orange to red (Table 3.16). While large maps (16 square feet) have been provided as part of this analysis, smaller size maps are presented in Appendix I.

Table 3.18. Fire Prone Landscape rankings and associated acres in each category for Jerome County.

Color Code	Value	Total Acres	Percent of Total Area
	0	-	0%
	10	2	0%
	20	173,737	45%
	30	21,358	6%
	40	22,365	6%
	50	149,290	39%
	60	14,060	4%
	70	4,123	1%
	80	267	0%
	90	2	0%
	100	-	0%

Figure 3.4: Distribution of area by Fire Prone Landscape Class.



The risk category values developed in this analysis should be considered **ordinal data**, that is, while the values presented have a meaningful ranking, they neither have a true zero point nor scale between numbers. Rating in the “40” range is not necessarily twice as “risky” as rating in the “20” range. These category values also do not correspond to a rate of fire spread, a fuel loading indicator, or measurable potential fire intensity. Each of those scales is greatly influenced by weather, seasonal and daily variations in moisture (relative humidity), solar

radiation, and other factors. The risk rating presented here serves to identify where certain constant variables are present, aiding in identifying where fires typically spread into the largest fires across the landscape.

3.8.2 Fire Regime Condition Class

The US Forest Service has provided their assessment of Fire Regime Condition Class for the forest and rangeland areas of Jerome County to this WUI Fire Mitigation Plan analysis. These measures of vegetative conditions are the standard method of analysis for the USDA Forest Service and the USDI Bureau of Land Management.

A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995). Coarse scale definitions for natural (historical) fire regimes have been developed by Hardy *et al.* (2001) and Schmidt *et al.* (2002) and interpreted for fire and fuels management by Hann and Bunnell (2001). The five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation. These five regimes include:

- I – 0-35 year frequency and low (surface fires most common) to mixed severity (less than 75% of the dominant overstory vegetation replaced);
- II – 0-35 year frequency and high (stand replacement) severity (greater than 75% of the dominant overstory vegetation replaced);
- III – 35-100+ year frequency and mixed severity (less than 75% of the dominant overstory vegetation replaced);
- IV – 35-100+ year frequency and high (stand replacement) severity (greater than 75% of the dominant overstory vegetation replaced);
- V – 200+ year frequency and high (stand replacement) severity.

As scale of application becomes finer these five classes may be defined with more detail, or any one class may be split into finer classes, but the hierarchy to the coarse scale definitions should be retained.

A fire regime condition class (FRCC) is a classification of the amount of departure from the natural regime (Hann and Bunnell 2001). Coarse-scale FRCC classes have been defined and mapped by Hardy *et al.* (2001) and Schmidt *et al.* (2001) (FRCC). They include three condition classes for each fire regime. The classification is based on a relative measure describing the degree of departure from the historical natural fire regime. This departure results in changes to one (or more) of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated disturbances (e.g. insect and diseased mortality, grazing, and drought). There are no wildland vegetation and fuel conditions or wildland fire situations that do not fit within one of the three classes.

The three classes are based on low (FRCC 1), moderate (FRCC 2), and high (FRCC 3) departure from the central tendency of the natural (historical) regime (Hann and Bunnell 2001, Hardy *et al.* 2001, Schmidt *et al.* 2002). The central tendency is a composite estimate of vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated natural disturbances. Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside.

Characteristic vegetation and fuel conditions are considered to be those that occurred within the natural (historical) fire regime. Uncharacteristic conditions are considered to be those that did not occur within the natural (historical) fire regime, such as invasive species (e.g. weeds, insects, and diseases), “high graded” forest composition and structure (e.g. large trees removed in a frequent surface fire regime), or repeated annual grazing that reduce grassy fuels across relatively large areas at levels that will not carry a surface fire. Determination of the amount of departure is based on comparison of a composite measure of fire regime attributes (vegetation characteristics; fuel composition; fire frequency, severity and pattern) to the central tendency of the natural (historical) fire regime. The amount of departure is then classified to determine the fire regime condition class. A simplified description of the fire regime condition classes and associated potential risks are presented in Table 3.19. Maps depicting Fire Regime and Condition Class are presented in Appendix I.

Table 3.19. Fire Regime Condition Class Definitions.

Fire Regime Condition Class	Description	Potential Risks
Condition Class 1	Within the natural (historical) range of variability of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	<p>Fire behavior, effects, and other associated disturbances are similar to those that occurred prior to fire exclusion (suppression) and other types of management that do not mimic the natural fire regime and associated vegetation and fuel characteristics.</p> <p>Composition and structure of vegetation and fuels are similar to the natural (historical) regime.</p> <p>Risk of loss of key ecosystem components (e.g. native species, large trees, and soil) is low.</p>
Condition Class 2	Moderate departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	<p>Fire behavior, effects, and other associated disturbances are moderately departed (more or less severe).</p> <p>Composition and structure of vegetation and fuel are moderately altered.</p> <p>Uncharacteristic conditions range from low to moderate.</p> <p>Risk of loss of key ecosystem components is moderate.</p>
Condition Class 3	High departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	<p>Fire behavior, effects, and other associated disturbances are highly departed (more or less severe).</p> <p>Composition and structure of vegetation and fuel are highly altered.</p> <p>Uncharacteristic conditions range from moderate to high.</p> <p>Risk of loss of key ecosystem components is high.</p>

An analysis of Fire Regime Condition Class in Jerome County shows that approximately 1% of the County is in Condition Class 1 (low departure), just about 49% is in Condition Class 2 (moderate departure), with no additional area in Condition Class 3 (Table 3.20).

Table 3.20. FRCC by area in Jerome County.

	Condition Class	Acres	Percent of Area
1	Low	2,894	1%
2	Moderate	188,779	49%
4	Agriculture	190,854	50%
5	rock/barren	14	0%
7	Urban	2,084	1%
8	Water	737	0%

See Appendix I for maps of Fire Regime and Conditions Class.

3.8.3 Predicted Fire Severity

Current fire severity (CFS) is an estimate of the relative fire severity if a fire were to burn a site under its current state of vegetation. In other words, how much of the overstory would be removed if a fire were to burn today. The US Forest Service (Flathead National Forest completed the analysis for all Federal Agencies in Idaho and Western Montana) did not attempt to model absolute values of fire severity, as there are too many variables that influence fire effects at any given time (for example, temperature, humidity, fuel moisture, slope, wind speed, wind direction).

The characterization of likely fire severity was based upon historic fire regimes, potential natural vegetation, cover type, size class, and canopy cover with respect to slope and aspect. Each cover type was assigned a qualitative rating of fire tolerance based upon likely species composition and the relative resistance of each species to fire. The US Forest Service researchers defined 3 broad classes of fire tolerance: high tolerance (<20 percent post-fire mortality); moderate tolerance (20 to 80 percent mortality); and low tolerance (>80 percent mortality). We would expect that fires would be less severe within cover types comprised by species that have a high tolerance to fire (for example, western larch and ponderosa pine). Conversely, fires would likely burn more severely within cover types comprised by species having a low tolerance to fire (for example grand fir, subalpine fir). Data assignments were based upon our collective experience in the field, as well as stand structure characteristics reported in the fire-history literature. For example, if they estimated that a fire would remove less than 20 percent of the overstory, the current fire severity would be assigned to the non-lethal class (that is, NL). However, if they expected fire to remove more than 80 percent of the overstory, the current fire severity was assigned to a stand replacement class (that is, SR or SR3).

3.8.3.1 Purpose

Fire is a dominant disturbance process in the Snake River Plain. The likely effect of fire upon vegetation (i.e., current fire severity) is critical information for understanding the subsequent fire effects upon wildlife habitats, water quality, and the timing of runoff. There have been many reports of how fire suppression and range management activities have affected vegetation patterns, fuels, and fire behavior. The US Forest Service researchers from the Flathead National Forest, derived the current fire severity theme explicitly to compare with the historical fire regime theme to evaluate how fire severity has changed since Euro-American settlement (that is, to derive fire-regime condition class).

3.8.3.2 General Limitations

These data were designed to characterize broad scale patterns of estimated fire severity for use in regional and subregional assessments. Any decisions based on these data should be supported with field verification, especially at scales finer than 1:100,000. Although the resolution of the CFS theme is 90 meter cell size, the expected accuracy does not warrant their use for analyses of areas smaller than about 10,000 acres (for example, assessments that typically require 1:24,000 data).

Current fire severity rule-set was developed for an "average burn day" for the specific vegetation types in our area. Any user of these data should familiarize themselves with the rule sets to better understand our estimate of current fire severity.

Table 3.21. Predicted Fire Severity by area in Jerome County.

	Predicted Fire Severity	Acres	Percent of Area
3	Mixed severity, long	246	0%
5	Stand replacement	2,140	1%
6	Non-forest std replc, shr	117,789	31%
7	Non-forest mx svrty, mod	4	0%
8	Non-forest std replc, mod	71,455	19%
9	Non-forest std replc, lng	38	0%
10	Agriculture	190,854	50%
11	Rock / barren	14	0%
13	Urban	2,084	1%
14	Water	737	0%

See Appendix I for a map of Predicted Fire Severity.

3.8.4 On-Site Evaluations

County fire suppression personnel and specialists from NMI evaluated the communities of Jerome County to determine, first-hand, the extent of risk and characteristics of hazardous fuels in the Wildland-Urban Interface. The on-site evaluations have been summarized in written narratives and are accompanied by photographs taken during the site visits. These evaluations included the estimation of fuel models as established by Anderson (1982). These fuel models are described in the following section of this document.

In addition, field personnel completed FEMA's Fire Hazard Severity Forms and Fire Hazard Rating Criteria Worksheets. These worksheets and standardized rating criteria allow comparisons to be made between all of the counties in the country using the same benchmarks. The FEMA rating forms are summarized for each community in Appendix II.

3.8.5 Fuel Model Descriptions

Anderson (1982) developed a categorical guide for determining fuel models to facilitate the linkage between fuels and fire behavior. These 13 fuel models, grouped into 4 basic groups: grass, chaparral and shrub, timber, and slash, provide the basis for communicating fuel conditions and evaluating fire risk. There are a number of ways to estimate fuel models in forest and rangeland conditions. The field personnel from Northwest Management, Inc., that evaluated communities and other areas of Jerome County have all been intricately involved in wildland fire fighting and the incident command system. They made ocular estimates of fuel models

encountered in the field. These estimates are generalizations, as fuel characteristics vary considerably over the landscape. A detailed, county-wide fuels assessment and mapping project would be extremely time consuming and beyond the scope of this project.

Fuel Model 0- This type consists of non-flammable sites, such as exposed mineral soil and rock outcrops. Other lands are also identified in this type.

3.8.5.1 Grass Group

3.8.5.1.1 Fire Behavior Fuel Model 1

Fire spread is governed by the fine, very porous, and continuous herbaceous fuels that have cured or are nearly cured. Fires are surface fires that move rapidly through the cured grass and associated material. Very little shrub or timber is present, generally less than one-third of the area.

Grasslands and savanna are represented along with stubble, grass-tundra, and grass-shrub combinations that met the above area constraint. Annual and perennial grasses are included in this fuel model.

This fuel model correlates to 1978 NFDRS fuel models A, L, and S.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch dead and alive, tons/acre	0.74
Dead fuel load, ¼-inch, tons/acre	0.74
Live fuel load, foliage, tons/acre	0
Fuel bed depth, feet.....	1.0

3.8.5.1.2 Fire Behavior Fuel Model 2

Fire is spread primarily through the fine herbaceous fuels, either curing or dead. These are surface fires where the herbaceous material, in addition to litter and dead-down stemwood from the open shrub or timber overstory, contribute to the fire intensity. Open shrub lands and pine stands or scrub oak stands that cover one-third to two-thirds of the area may generally fit this model; such stands may include clumps of fuels that generate higher intensities than that may produce firebrands. Some pinyon-juniper may be in this model.

This fuel model correlates to 1978 NFDRS fuel models C and T.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch dead and alive, tons/acre	4.0
Dead fuel load, ¼-inch, tons/acre	2.0
Live fuel load, foliage, tons/acre	0.5
Fuel bed depth, feet.....	1.0

3.8.5.1.3 Fire Behavior Fuel Model 3

Fires in this fuel are the most intense of the grass group and display high rates of spread under the influence of wind. Wind may drive fire into the upper heights of the grass and across standing water. Stands are tall, averaging about 3 feet (1 m), but considerable variation may occur. Approximately one-third or more of the stand is considered dead or cured and maintains the fire. Wild or cultivated grains that have not been harvested can be considered similar to tall prairie and marshland grasses.

This fuel correlates to 1978 NFDRS fuel model N.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch dead and live, tons/acre	3.0
Dead fuel load, ¼-inch, tons/acre	3.0
Live fuel load, foliage tons/acre	0
Fuel bed depth, feet.....	2.5

3.8.5.2 Shrub Group

3.8.5.2.1 Fire Behavior Fuel Model 4

Fire intensity and fast-spreading fires involve the foliage and live and dead fine woody material in the crowns of a nearly continuous secondary overstory. Stands of mature shrubs, 6 or more feet tall, such as California mixed chaparral, the high pocosin along the east coast, the pinebarrens of New Jersey, or the closed jack pine stands of the north-central States are typical candidates. Besides flammable foliage, dead woody material in the stands significantly contributes to the fire intensity. Height of stand qualifying for this model depends on local conditions. A deep litter layer may also hamper suppression efforts.

This fuel model represents 1978 NFDRS fuel models B and O; fire behavior estimates are more severe than obtained by Models B or O.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch dead and live, tons/acre	13.0
Dead fuel load, ¼-inch, tons/acre	5.0
Live fuel load, foliage, tons/acre	5.0
Fuel bed depth, feet.....	6.0

3.8.5.2.2 Fire Behavior Fuel Model 5

Fire is generally carried in the surface fuels that are made up of litter cast by the shrubs and the grasses or forbs in the understory. The fires are generally not very intense because surface fuel loads are light, the shrubs are young with little dead material, and the foliage contains little volatile material. Usually shrubs are short and almost totally cover the area. Young, green stands with no dead wood would qualify: laurel, vine maple, alder, or even chaparral, manzanita, or chamise.

No 1978 NFDRS fuel model is represented, but model 5 can be considered as second choice for NFDRS model D or as third choice for NFDRS model T. Young green stands may be up to 6 feet (2m) high but have poor burning properties because of live vegetation.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch dead and live, tons/acre	3.5
Dead fuel load, ¼-inch, tons/acre	1.0
Live fuel load, foliage, tons/acre	2.0
Fuel bed depth, feet.....	2.0

3.8.5.2.3 Fire Behavior Fuel Model 6

Fires carry through the shrub layer where the foliage is more flammable than fuel model 5, but this requires moderate winds, greater than 8 mi/h (13 km/h) at mid-flame height. Fire will drop to

the ground at low wind speeds or at openings in the stand. The shrubs are older, but not as tall as shrub types of model 4, nor do they contain as much fuel as model 4. A broad range of shrub conditions is covered by this model. Fuel situations to be considered include intermediate stands of chamise, chaparral, oak brush, low pocosin, Alaskan spruce taiga, and shrub tundra. Even hardwood slash that has cured can be considered. Pinyon-juniper shrublands may be represented but may over-predict rate of spread except at high winds, like 20 mi/h (32 km/h) at the 20-foot level.

The 1978 NFDRS fuel models F and Q are represented by this fuel model. It can be considered a second choice for models T and D and a third choice for model S.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch dead and live, tons/acres.....	6.0
Dead fuel load, 1/4 –inch, tons/acre	1.5
Live fuel load, foliage, tons/acre	0
Fuel bed depth, feet.....	2.5

3.8.5.2.4 Fire Behavior Fuel Model 7

Fires burn through the surface and shrub strata with equal ease and can occur at higher dead fuel moisture contents because of the flammability of live foliage and other live material. Stands of shrubs are generally between 2 and 6 feet (0.6 and 1.8 m) high. Palmetto-gallberry understory-pine overstory sites are typical and low pocosins may be represented. Black spruce-shrub combinations in Alaska may also be represented.

This fuel model correlates with 1978 NFDRS model D and can be a second choice for model Q.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch dead and live, tons/acre	4.9
Dead fuel load, 1/4-inch, tons/acre	1.1
Live fuel load, foliage, tons/acre	0.4
Fuel bed depth, feet.....	2.5

3.8.5.3 Timber Group

3.8.5.3.1 Fire Behavior Fuel Model 8

Slow-burning ground fires with low flame lengths are generally the case, although the fire may encounter an occasional “jackpot” or heavy fuel concentration that can flare up. Only under severe weather conditions involving high temperatures, low humidities, and high winds do the fuels pose fire hazards. Closed canopy stands of short-needle conifers or hardwoods that have leafed out support fire in the compact litter layer. This layer is mainly needles, leaves, and occasionally twigs because little undergrowth is present in the stand. Representative conifer types are white pine, and lodgepole pine, spruce, fir and larch

This model can be used for 1978 NFDRS fuel models H and R.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch, dead and live, tons/acre	5.0
Dead fuel load, 1/4-inch, tons/acre	1.5
Live fuel load, foliage, tons/acre	0
Fuel bed depth, feet.....	0.2

3.8.5.3.2 Fire Behavior Fuel Model 9

Fires run through the surface litter faster than model 8 and have longer flame height. Both long-needle conifer stands and hardwood stands, especially the oak-hickory types, are typical. Fall fires in hardwoods are predictable, but high winds will actually cause higher rates of spread than predicted because of spotting caused by rolling and blowing leaves. Closed stands of long-needled pine like ponderosa, Jeffrey, and red pines, or southern pine plantations are grouped in this model. Concentrations of dead-down woody material will contribute to possible torching out of trees, spotting, and crowning.

NFDRS fuel models E, P, and U are represented by this model. It is also a second choice for models C and S.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch dead and live, tons/acre	3.5
Dead fuel load, ¼-inch, tons/acre	2.9
Live fuel load, foliage, tons/acre	0
Fuel bed depth, feet	0.2

3.8.5.3.3 Fire Behavior Fuel Model 10

The fires burn in the surface and ground fuels with greater fire intensity than the other timber litter models. Dead-down fuels include greater quantities of 3-inch (7.6 cm) or larger limbwood, resulting from overmaturity or natural events that create a large load of dead material on the forest floor. Crowning out, spotting, and torching of individual trees are more frequent in this fuel situation, leading to potential fire control difficulties. Any forest type may be considered if heavy down material is present; examples are insect- or disease-ridden stands, wind-thrown stands, overmature situations with dead fall, and aged light thinning or partial-cut slash.

The 1978 NFDRS fuel model G is represented.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch dead and live, tons/acre	12.0
Dead fuel load, ¼-inch, tons/acre	3.0
Live fuel load, foliage, tons/acre	2.0
Fuel bed depth, feet	1.0

The fire intensities and spread rates of these timber litter fuel models are indicated by the following values when the dead fuel moisture content is 8 percent, live fuel moisture is 100 percent, and the effective windspeed at mid-flame height is 5 mi/h (8 km/h):

Table 3.22. Comparative Fire Intensities and Rates of Spread in Timber Fuel Models.

Fuel Model	Rate of Spread	Flame length
	Chains/hour	Feet
8	1.6	1.0
9	7.5	2.6
10	7.9	4.8

Fires such as above in model 10 are at the upper limit of control by direct attack. More wind or drier conditions could lead to an escaped fire.

3.8.5.4 Logging Slash Group

3.8.5.4.1 Fire Behavior Fuel Model 11

Fires are fairly active in the slash and herbaceous material intermixed with the slash. The spacing of the rather light fuel load, shading from overstory, or the aging of the fine fuels can contribute to limiting the fire potential. Light partial cuts or thinning operations in mixed conifer stands, hardwood stands, and southern pine harvests are considered. Clearcut operations generally produce more slash than represented here. The less-than-3-inch (7.6-cm) material load is less than 12 tons per acre (5.4 t/ha). The greater-than-3-inch (7.6-cm) is represented by not more than 10 pieces, 4 inches (10.2 cm) in diameter, along a 50-foot (15 m) transect.

The 1978 NFDRS fuel model K is represented by this model.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch, dead and live, tons/acre	11.5
Dead fuel load, ¼-inch, tons/acre	1.5
Live fuel load, foliage, tons/acre	0
Fuel bed depth, feet	1.0

3.8.5.4.2 Fire Behavior Fuel Model 12

Rapidly spreading fires with high intensities capable of generating firebrands can occur. When fire starts, it is generally sustained until a fuel break or change in fuels is encountered. The visual impression is dominated by slash and much of it is less than 3 inches (7.6 cm) in diameter. The fuels total less than 35 tons per acres (15.6 t/ha) and seem well distributed. Heavily thinned conifer stands, clearcuts, and medium or heavy partial cuts are represented. The material larger than 3 inches (7.6 cm) is represented by encountering 11 pieces, 6 inches (15.3 cm) in diameter, along a 50-foot (15-m) transect.

This model depicts 1978 NFDRS model J and may overrate slash areas when the needles have dropped and the limbwood has settled. However, in areas where limbwood breakup and general weathering have started, the fire potential can increase.

Fuel model values fore estimating fire behavior

Total fuel load, < 3-inch, dead and live, tons/acre	34.6
Dead fuel load, ¼-inch, tons/acre	4.0
Live fuel load, foliage, tons/acre	0
Fuel bed depth, feet	2.3

3.8.5.4.3 Fire Behavior Fuel Model 13

Fire is generally carried across the area by a continuous layer of slash. Large quantities of material larger than 3 inches (7.6 cm) are present. Fires spread quickly through the fine fuels and intensity builds up more slowly as the large fuels start burning. Active flaming is sustained for long periods and a wide variety of firebrands can be generated. These contribute to spotting problems as the weather conditions become more severe. Clearcuts and heavy partial-cuts in mature and overmature stands are depicted where the slash load is dominated by the greater-tayhn-3-inch (7.6-cm) diameter material. The total load may exceed 200 tons per acre (89.2 t/ha) but fuel less than 3 inches (7.6 cm_ is generally only 10 percent of the total load. Situations where the slash still has “red” needles attached but the total load is lighter, more like model 12, can be represented because of the earlier high intensity and quicker area involvement.

The 1978 NFDRS fuel model 1 is represented. Areas most commonly fitting his model are old-growth stands west of the Cascade and Sierra Nevada Mountains. More efficient utilization standards are decreasing the amount of large material left in the field.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch dead and live, tons/acre 58.1
 Dead fuel load, ¼-inch, tons/acre 7.0
 Live fuel load, foliage, tons/acre 0
 Fuel bed depth, feet 3.0

For other slash situations:

Hardwood slashModel 6
 Heavy “red” slash.....Model 4
 Overgrown slash.....Model 10
 Southern pine clearcut slash.....Model 12

The comparative rates of spread and flame lengths for the slash models at 8 percent dead fuel moisture content and a 5 mi/h (8 km/h) mid-flame wind are presented in Table 3.21.

Table 3.23. Comparative Fire Intensities and Rates of Spread in Slash Fuel Models.

Fuel Model	Rate of Spread	Flame length
	Chains/hour	Feet
11	6.0	3.5
12	13.0	8.0
13	13.5	10.5

3.9 Wildland-Urban Interface

3.9.1 People and Structures

The wildland-urban interface refers to areas where wildland vegetation meets urban developments, or where rangeland fuels meet urban or agricultural fuels. Reducing the hazard in the wildland urban interface requires the efforts of federal, state, local agencies, and private individuals (Norton 2002). “The role of [most] federal agencies in the wildland-urban interface includes wildland fire fighting, hazard fuels reduction, cooperative prevention and education and technical experience. Structural fire protection [during a wildfire] in the wildland urban interface is [largely] the responsibility of Tribal, state, and local governments” (USFS 2001). Property owners share a responsibility to protect their residences and businesses and minimize danger by creating defensible areas around them and taking other measures to minimize the risks to their structures (USFS 2001). With treatment, a wildland-urban interface can provide firefighters a defensible area from which to suppress wildland fires or defend communities against other hazard risks. (Norton 2002).

By reducing hazardous fuel loads, brush densities and fine fuels and creating or maintaining survivable space, landowners would protect the wildland-urban interface, the biological resources of the management area, and adjacent property owners by:

- minimizing the potential of high-severity range or agricultural fires entering or leaving the area;
- reducing the potential for firebrands (embers carried by the wind in front of the wildfire) impacting the WUI.
- improving survivable space in the immediate areas for suppression efforts in the event of wildland fire.

Four wildland-urban interface conditions have been identified for use in wildfire control efforts (Norton 2002). These include the Interface Condition, Intermix Condition, Occluded Condition, and Rural Condition. Descriptions of each are as follows:

- **Interface Condition** – a situation where structures abut wildland fuels. There is a clear line of demarcation between the structures and the wildland fuels along roads or back fences. The development density for an interface condition is usually 3+ structures per acre;
- **Intermix Condition** – a situation where structures are scattered throughout a wildland area. There is no clear line of demarcation, the wildland fuels are continuous outside of and within the developed area. The development density in the intermix ranges from structures very close together to one structure per 40 acres;
- **Occluded Condition** – a situation, normally within a city, where structures abut an island of wildland fuels (park or open space). There is a clear line of demarcation between the structures and the wildland fuels along roads and fences. The development density for an occluded condition is usually similar to that found in the interface condition and the occluded area is usually less than 1,000 acres in size; and
- **Rural Condition** – a situation where the scattered small clusters of structures (ranches, farms, resorts, or summer cabins) are exposed to wildland fuels. There may be miles between these clusters.

The location of structures in Jerome County have been mapped and are presented on a variety of maps in this document; specifically in Appendix I. The location of all structures was determined by examining two sets of remotely sensed images. The more detailed information was garnered from digital ortho-photos at a resolution of 1 meter (from 1998). For those areas not covered by the 1 meter DOQQ images, SPOT satellite imagery at a resolution of 10 meters was used (from 2002). These records were augmented with information provided by fire district and other county personnel in developing areas.

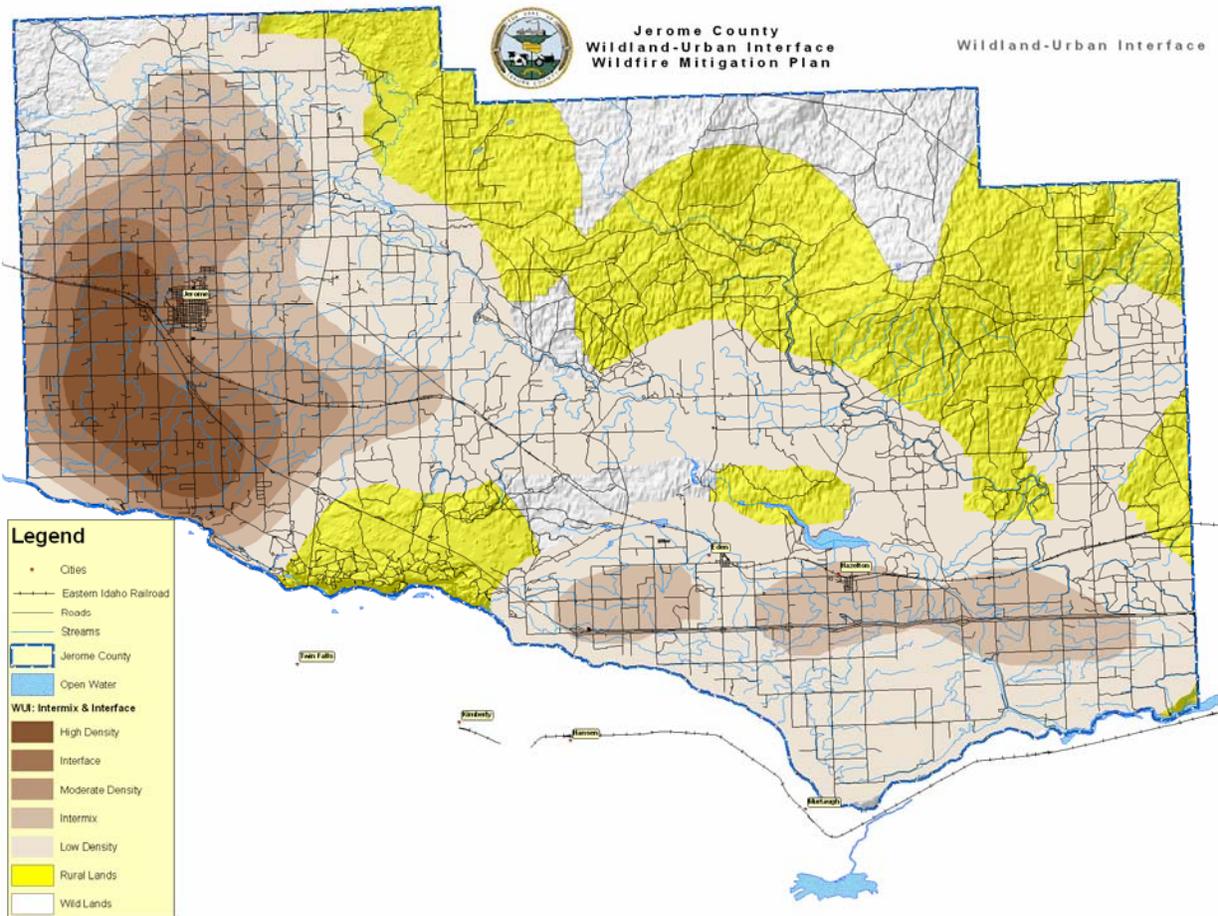
All structures are represented by a “dot” on the map. No differentiation is made between a garage and a home, or a business and a storage building. The density of structures and their specific locations in this management area are critical in defining where the potential exists for casualty loss in the event of a large scale wildland fire in the region.

By evaluating this structure density, we can define WUI areas on maps by using mathematical formulae and population density indexes to define the WUI based on where structures are located. The resulting population density indexes create concentric circles showing high density areas of Interface and Intermix WUI, as well as Rural WUI (as defined by Secretary Norton of the Department of Interior). This portion of the analysis allows us to “see” where the highest concentrations of structures are located in reference to high risk landscapes, limiting infrastructure, and other points of concern.

It is critical to understand that in the protection of people, structures, infrastructure, and unique ecosystems, this portion of the analysis only serves to identify structures and by some extension

the people that inhabit them. It does not define the location of infrastructure and unique ecosystems. Other analysis tools will be used for those items.

Figure 3.5. Wildland-Urban Interface of Jerome County.



This map is presented for reference in this section of the plan. This map, and additional maps are detailed in Appendix I.

3.9.2 Infrastructure

There are multiple infrastructure resources that are potentially at risk to wildland fire in Jerome County. Damage of infrastructure may be temporary and isolated, only impacting small areas for short periods of time. However, in many cases, the consequence of damage or destruction of major resources would impact the safety, economy and way of life for tens of thousands of people throughout the intermountain and northwest regions.

3.9.2.1 Power Transmission Lines

Primary, secondary, and feeder power lines are pass through residential, agricultural and rangeland areas in the county. Those at greatest risk to direct impact from fire are those that are supported by wooden poles that can easily catch fire in the event of a fire. The blackened power poles along Interstate 84 east of Exit 173 exemplify this risk. These poles were burned by the Bacon Pond fire of 2003. In many cases, the wooden telephone or power poles can be extinguished before the integrity of the pole is significantly compromised. However, damage to

transformers and other power components may result. During large wildland incidents when hundreds or thousands of poles may catch fire, significant numbers of poles may fail, leading to downed lines and significant safety risks. These lines provide power throughout the region and destruction of damage of these lines would significantly interrupt day-to-day life for thousands. Repair times and power outages would be proportional to the scale of the event.

3.9.2.2 Railroads

Both the Union Pacific and Southern Idaho Railroads maintain lines through Jerome County. The rail lines are generally not at great risk to the effects of wildland fire due to the gravel right-of-way associated with the tracks. There is a potential for disruption of rail service where wooden bridges and support structures are adjacent to wildland fuels. The creosote treatment of these support structures is highly flammable and quite prone. Thus it is possible for rail transport to be disrupted due to wildland fire.

Rail lines often contribute to wildland fire occurrence along their right-of-way. Numerous fires are sparked along rail lines throughout Jerome County each year. Although new technologies have significantly reduced the occurrence of railroad fires over time, malfunctioning brakes and other components are frequently responsible for fire ignitions. When vegetation is allowed to accumulate along the right-of-way, the probability of fires associated with the railroad increases dramatically. Frequently, multiple fires over miles of railroad result from a component malfunction.

3.9.2.3 Primary and Secondary Roads

Primary and secondary roads are generally not at risk of damage by wildland fire. However, fires frequently disrupt travel and commerce due to impaired visibility and suppression activities. Large fires can cause prolonged road closures with a notable impact to inter-county and interstate travel.

Smoke from any type of fire, wildland or agricultural, can pose significant risks public safety. Obscured vision can lead to collisions that can result in accidents with significant economic cost and a possible loss of life. Smoke from an agricultural burn was a cited as a contributing factor in a twenty-one car pile up on Interstate 84 in western Minidoka County this past year. Amazingly, no serious injuries occurred. However, the incident caused major delay and resulted in a tremendous financial and emotional cost.

As discussed previously, numerous fires are sparked along roads throughout the county each year, particularly along Interstate 84. The frequency of roadway fires demonstrates the need for roadway treatments to reduce the flammability of vegetation immediately adjacent to the road right-of-way.

3.9.2.4 Water Resources

Irrigation water originates from seasonal runoff and the Snake River Plain aquifer. Water stored in Jackson and Walcott Lakes and in American Falls and Palisades Reservoirs is managed by the Jerome Irrigation District and the Northside Canal Compact. The A & B Irrigation District, Bigwood River Canal Company and deep private wells supply irrigation water to a majority of the irrigated farmland.

Wells in the Snake River Plain aquifer supply water for domestic, municipal, and industrial uses. Stock water on the rangeland is obtained from streams, springs, and wells. Wells in the northern part of the county generally are deeper than those close to the Snake River. Generally, these

water resources are at little direct threat from sedimentation or other secondary effects associated with wildland fire.

3.9.3 Ecosystems

Jerome County is a diverse ecosystem with a complex array of vegetation, wildlife, and fisheries that have evolved with fire as a natural disturbance process. Introduction of non-native plant species such as cheatgrass, overgrazing and past land-use practices has altered plant community succession and has resulted in dramatic shifts in the fire regimes and species composition. As a result, rangelands in Jerome County have become more susceptible to large-scale, high intensity fires posing a threat to life, property, and natural resources including wildlife and special status plant populations and habitats. High-intensity fires have the potential to seriously damage soils and native vegetation.

Recently, there has been considerable concern regarding the plight of the Sage Grouse. The sage-grouse is one of North America's most spectacular birds. As its name suggests, sage grouse a sage brush obligate species, solely dependant on healthy sage grasslands habitat, which was once abundant throughout the West. Sagebrush provides the birds' primary source of food and shelter, and offers a setting for the birds' traditional courting ritual. In 2000 the U.S. Fish and Wildlife Service designated the Gunnison sage-grouse a "candidate" for the Endangered Species list, having disappeared from most of its historic habitat. The greater sage-grouse has also experienced significant range and population reductions in many areas. These concerns necessitate consideration prior to the implementation of any projects that may further reduce sage grouse habitat.

Large wildland fires also reduce habitat quality for large mammals such as deer and elk as well as for numerous smaller mammals and reptiles. Many of these are sagebrush obligates and are displaced by large, high-intensity wildfires that consume the sage and brush.

3.10 Soils

There are various soil types in the Jerome County area. Four major soil divisions are found:

1. Forty-four percent of the land area is nearly level to moderately sloping, mesic soils that are shallow to very deep over a duripan and are suitable for cultivated crops.
2. Thirty-four percent of the land area is rock outcrop and nearly level to moderately sloping, mesic soils that are shallow, moderately deep, and very deep over a duripan on terraces, dip slopes, and ridges. These soils are mostly rangeland and irrigated cropland.
3. Eighteen percent of the land area is gently sloping to steep, frigid and cryic soils that are shallow to very deep over bedrock, shallow and moderately deep over a duripan, and formed in alluvium, colluvium, and residuum on breaks, dip slopes, hill slopes, ridges, summits, and terraces. These soils are primarily rangelands.
4. Four percent of the land area is rock outcrop or steep to very steep, mesic soils that are shallow to very deep over bedrock and formed in colluvium on breaks. These areas are primarily rangelands.

The soil resource is an extremely important component for maintaining a healthy ecosystem and economy. Fire can play an intricate role in this process, if it occurs under normal conditions of light fuels associated with low intensity burns. However, the buildup of fuels and consequent high severity fires can cause soils to become water repellent (hydrophobic), and thus greatly increases the potential for overland flow during intense rains. Soil in degraded conditions does

not function normally, and will not be able to sustain water quality, water yield, or plant communities that have normal structure, composition, and function. Fire is also strongly correlated with the carbon-nutrient cycles and the hydrologic cycle. Fire frequency, extent, and severity are controlled to a large degree by the availability of carbon, as well as the moisture regime (Quigley & Arbelbide 1997).

Soils were evaluated for their propensity to become hydrophobic during and after a fire as evidenced by the presence of clay and clay derivatives (e.g., clay loam, cobbly clay) in the upper soil layers. In addition, their permeability and tendency to allow runoff to infiltrate the soil rapidly was evaluated. In general, with notable exceptions, the majority of the area within Jerome County has highly variable clay content in the A and Bt horizons. Textures range from gravelly or silty clay loams, which have a relatively high concentration of clay to sandy loam with very little clay content. On average these soils are well drained with moderate to very slow permeability.

Low to moderate intensity fires would be not be expected to damage soil characteristics in the region, especially if the hotter fires in this range were limited to small extents associated with jackpots of cured fuels. Hot fires providing heat to the Bt horizon substrate depth have the potential to create hydrophobic characteristics in that layer. This can result in increased overland flow during heavy rains, following wildfire events, potentially leading to mass wasting. Rocky and gravelly characteristics in the A horizon layer would be expected to be displaced, while the silty and loamy fines in these soils may experience an erosion and displacement potential. These soils will experience the greatest potential impacts resulting from hot fires that burn for prolonged periods (especially on steep slopes).

The National Resource Conservation Service (NRCS) has mapped a large portion of Jerome County in detail. A complete soil survey for Jerome County was distributed in 2003. Please refer the Jerome and parts of Twin Falls County NRCS Soil Survey Report to view each soil unit in the County and the associated characteristics relating to the effects of wildland fire.

3.10.1 Physiography

Geologically, the survey area is part of the Snake River Plain. During the Mesozoic era, the area uplifted and low hills formed. Events of the Cenozoic era dictated the present geology. Faults and fissures released molten lava from low profile shield volcanoes. There are about 40 shield volcanoes and basalt vents in the survey area. The bedrock in the area consists of shallow basalt lava flows underlain by rhyolite. These lava flows intermittently blocked watercourses and created pluvial lakes that filled with sediment. The basalt flows and volcanic material along with glacial debris and lacustrine deposits influenced the many soils that developed.

The survey area is characterized by terraces, dip slopes, hill slopes, breaks, ridges, and summits. These surfaces formed as a result of geologic action. Relief influences soil formation by its effect on erosion, effective precipitation, soil drainage, air drainage, and exposure to sun and wind. Relief over the entire area is about 5,000 feet. Soils on stable terraces generally exhibit the most development because of the reduced risk of erosion and runoff. On steep slopes, parent material is unstable and the risk of runoff and erosion is higher.

3.10.2 Fire Mitigation Practices to Maintain Soil Processes

Firelines constructed by hand or with the use of machinery will have varying impacts, depending upon construction techniques. If only the surface litter is removed in the fireline construction, minor increases to soil erosion may occur. If trenches are dug which channelize runoff down steep slopes, heavy rilling or gullying could occur depending upon rock content of surface layers exposed. Jackpot burning and, to a greater extent, pile burning would result in greater soil

heating and localized impacts. Loss of soil carbon, nitrogen, sulphur, phosphorus, potassium, and soil organisms would be high in the soil surface layer. Soil physical structure could be altered thereby creating hydrophobic soils, especially where clay content is moderate or high.

Re-vegetation of burned areas immediately following fire events is critical to maintain soil resources and pre-empting noxious weeds and invasive species from occupying the site. The fire rehabilitation efforts of the BLM have been quite successful in reducing invasion of Cheatgrass and other non-native species. These rehab efforts help maintain soil fertility and plant species composition by establishing less flammable grass and forb species that the invasives that would otherwise dominate the burn area.

Where heavy grazing has occurred in the past, there is also a possibility that soil productivity has been reduced. This is especially true in riparian areas where animal concentrations have historically been the greatest. These areas generally have easily compacted soils, and are where cattle tend to linger if not managed well. Mining also has significant effects on soil quality through soil compaction and mass displacement.

To avoid potential impacts, wherever possible firelines should be located outside of highly erosive areas, steep slopes, intermittent streams, and riparian and other sensitive areas. Following prescribed fire or fire suppression activities, firelines and burned areas should be rehabilitated.

3.11 Hydrology

The Idaho Water Resource Board is charged with the development of the Idaho Comprehensive State Water Plan. Included in the State Water Plan are the statewide water policy plan and component basin and water body plans which cover specific geographic areas of the state (IDEQ 2003). The Idaho Department of Water Resources has prepared General Lithologies of the Major Ground Water Flow Systems in Idaho. The state may assign or designate beneficial uses for particular Idaho water bodies to support. These beneficial uses are identified in sections 3.35 and 100.01 - .05 of the Idaho water quality standards (WQS). These uses include:

- **Aquatic Life Support:** cold water biota, seasonal cold water biota, warm water biota, and salmonid spawning;
- **Contact Recreation:** primary (swimming) and secondary (boating);
- **Water Supply:** domestic, agricultural, and industrial; and
- **Wildlife Habitat and Aesthetics.**

While there may be competing beneficial uses in streams, federal law requires DEQ to protect the most sensitive of these beneficial uses (IDEQ 2003).

A correlation to mass wasting due to the removal of vegetation caused by farming, grazing, and high intensity wildland fire has been documented. Burned vegetation can result in changes in soil moisture and loss of rooting strength that can result in slope instability, especially on slopes greater than 30%. Disrupted vegetation patterns from farming (soil compaction) and wildland fire (especially hot fires that increase soil hydrophobic characteristics), can lead to increased surface runoff and debris flow to stream channels. The greatest watershed impacts from increased sediment will be in the lower gradient, depositional stream reaches. Riparian function and channel characteristics have been altered by ranch and residential areas as well. The current conditions of wetlands and floodplains are variable. Some wetlands and floodplains have been impacted by past management activities.

3.11.1 Fire Mitigation Practices to Maintain Hydrologic Processes

The effects of wildland fire and prescribed burning on water quality are variable. The removal of the vegetative canopy will tend to reduce transpiration and increase water yield, especially during the growing season and immediately afterwards (MacDonald *et al.* 1991). Prescribed burning is used to maintain a healthy, dynamic ecosystem while meeting land management objectives. Prescribed burning objectives include reduction of natural fuels, assuring current and future habitat conditions for native plants and animals, and improvement of rangeland health. In rangeland ecosystems, prescribed fire will have variable impacts dependant on burn intensity and proximity to streams. Stream buffering (low intensity to no burn around streams) has been shown to preserve most if not all normal sediment filtering functions.

A large, high intensity rangeland fire could have negative effects on watershed conditions, thus affecting both fish and habitat in streams. Treatment with low to moderate intensity fire would result in a mosaic pattern of burned and unburned areas of ground level vegetation species and ground level natural fuels. Some patches of shade-tolerant, fire intolerant species may also be consumed. Prescribed burning is not designed to consume all vegetation within project areas. Each treatment will leave a mosaic of burned and unburned areas. Once the target fuels and the risk of fire carrying from one tributary to another have been reduced, hand ignition may be considered on a site-specific basis.

The effects on sediment yield vary according to the intensity of fire; degree of soil disturbance; steepness of the slope and drainage network; the size of the area burned; and the extent to which the vegetation controls the movement and storage of sediment. Fire also increases surface erosion and sediment delivery rates by removing the litter layer and organic debris that traps sediment both on slopes and in the stream channel (MacDonald *et al.* 1991). The magnitude of these effects will depend on the geomorphic sensitivity of the landscape, which is largely a function of slope steepness and parent material (Swanson 1978).

Fire can greatly increase surface erosion by temporarily creating a hydrophobic soil layer. Soils within the project area are generally at moderate risk for hydrophobic conditions due to their fine-grained textures and clay content. In addition, the relatively low burn intensity of the prescribed fires will also help prevent the formation of hydrophobic soils.

The effects of wildland fire or prescribed fire are generally considered in terms of potential short-term, negative effects and long-term benefits of fuels reduction, which will result in a decreased risk of high intensity, rangeland fire. Potential short-term effects to streams and fish include increased risk of landslides, mass movement and debris torrents, increases in surface sediment erosion, possible reduction in streamside vegetation resulting in changes within management areas, and possible increases in water yield depending on the amount and severity of the vegetation burned. Long-term effects include increases in nutrient delivery, possible increases in woody debris in streams, and possible increases in stream temperature if shading is significantly reduced. The design criteria described above minimizes the risk that landslides, mass movement, significant increases in surface sediment yield, and significant changes in water yield will occur.

Reduction of vegetation will mostly be limited to creeping ground fires, which will reduce understory and ground vegetation. Spring burning often results in minimal riparian vegetation burned because streamside areas have higher humidity and live plant moisture. Fall burning will more likely result in understory vegetation removal, with a possibility of some tree and large shrub mortality, especially outside of riparian zones where live plant moisture is less.

Riparian buffer strips will be maintained, thereby preserving canopy cover for shading, sediment filtering, and streambank and floodplain stability (PACFISH guidelines). Areas not burned will

provide significant protection from adverse water quality impacts associated with wildland fire and prescribed burning. Therefore, effects to fish and habitat in these streams from increased water yield are unlikely. The area has been roaded from past management activities. Therefore, increased road densities from road construction are not expected to be of a magnitude to increase sedimentation to affected drainages, provided adequate planning for new road construction is implemented.

3.12 Air Quality

The primary means by which the protection and enhancement of air quality is accomplished is through implementation of National Ambient Air Quality Standards (NAAQS). These standards address six pollutants known to harm human health including ozone, carbon monoxide, particulate matter, sulfur dioxide, lead, and nitrogen oxides (USDA Forest Service 2000).

Smoke emissions from fires potentially affect an area and the airsheds that surround it. Climatic conditions affecting air quality in central Idaho are governed by a combination of factors. Large-scale influences include latitude, altitude, prevailing hemispheric wind patterns, and mountain barriers. At a smaller scale, topography and vegetation cover also affect air movement patterns. In Jerome County, winds are generally from a southwesterly direction throughout the year. Air quality in the area and surrounding airshed is generally good to excellent. However, locally adverse conditions can result from occasional wildland fires in the summer and fall, and prescribed fire and agricultural burning in the spring and fall. All major river drainages are subject to temperature inversions which trap smoke and affect dispersion, causing local air quality problems. This occurs most often during the summer and fall months.

Jerome County is in South Idaho Airshed Unit 25: Montana/Idaho Airshed Group Operating Guide (Levinson 2002). An airshed is a geographical area which is characterized by similar topography and weather patterns (or in which atmospheric characteristics are similar, e.g., mixing height and transport winds). The USDA Forest Service, Bureau of Land Management, and the Idaho Department of Lands are all members of the Montana/Idaho State Airshed Group, which is responsible for coordinating burning activities to minimize or prevent impacts from smoke emissions. Prescribed burning must be coordinated through the Missoula Monitoring Unit, which coordinates burn information, provides smoke forecasting, and establishes air quality restrictions for the Montana/Idaho Airshed Group. The Monitoring Unit issues daily decisions which may restrict burning when atmospheric conditions are not conducive to good smoke dispersion. Burning restrictions are issued for airsheds, impact zones, and specific projects. The monitoring unit is active March through November. Each Airshed Group member is also responsible for smoke management all year.

The Clean Air Act, passed in 1963 and amended in 1977, is the primary legal authority governing air resource management. The act established a process for designation of Class I and Class II areas for air quality management. Class I areas receive the highest level of protection and numerical thresholds for pollutants are most restrictive for this Class. The Sawtooth and Craters of the Moon Class I Areas are located north of Jerome County and would be affected by burning activities.

All of the communities within Jerome County could be affected by smoke or regional haze from burning activities in the region. Idaho Department of Environmental Quality maintains Air Pollution Monitoring Sites throughout Idaho. The Air Pollution Monitoring program monitors all of the six criteria pollutants. Measurements are taken to assess areas where there may be a problem, and to monitor areas that already have problems. The goal of this program is to control areas where problems exist and to try to keep other areas from becoming problem air pollution areas (Louks 2001).

The Clean Air Act provides the principal framework for national, state, and local efforts to protect air quality. Under the Clean Air Act, OAQPS (Organization for Air Quality Protection Standards) is responsible for setting standards, also known as national ambient air quality standards (NAAQS), for pollutants which are considered harmful to people and the environment. OAQPS is also responsible for ensuring these air quality standards are met, or attained (in cooperation with state, Tribal, and local governments) through national standards and strategies to control pollutant emissions from automobiles, factories, and other sources (Louks 2001).

3.12.1 Fire Mitigation Practices to Maintain Air Quality

Smoke consists of dispersed airborne solids and liquid particles, called particulates, which can remain suspended in the atmosphere for a few days to several months. Particulates can reduce visibility and contribute to respiratory problems. Very small particulates can travel great distances and add to regional haze problems. Regional haze can sometimes result from multiple burn days and/or multiple owners burning within an airshed over too short a period of time to allow for dispersion.

For prescribed fires, there are three principle strategies to manage smoke and reduce air quality effects. They include:

1. **Avoidance** - This strategy relies on monitoring meteorological conditions when scheduling prescribed fires to prevent smoke from drifting into sensitive receptors, or suspending burning until favorable weather (wind) conditions exist. Sensitive receptors can be human-related (e.g. campgrounds, schools, churches, and retirement homes) or wildlife-related (threatened and endangered species and their critical habitats);
2. **Dilution** – This strategy ensures proper smoke dispersion in smoke sensitive areas by controlling the rate of smoke emissions or scheduling prescribed fires when weather systems are unstable, not under conditions when a stable high-pressure area is forming with an associated subsidence inversion. An inversion would trap smoke near the ground; and
3. **Emission Reduction** – This strategy utilizes techniques to minimize the smoke output per unit area treated. Smoke emission is affected by the number of acres burned at one time, pre-burn fuel loadings, fuel consumption, and the emission factor. Reducing the number of acres burned at one time would reduce the amount of emissions generated by that burn. Reducing the fuel beforehand reduces the amount of fuel available. Prescribed burning when fuel moistures are high can reduce fuel consumption. Emission factors can be reduced by pile burning or by using certain firing techniques such as mass ignition.

If weather conditions changed unexpectedly during a prescribed burn, and there was a potential for violating air quality standards or for adverse smoke impacts on sensitive receptors (schools, churches, hospitals, retirement homes, campgrounds, wilderness areas, and species of threatened or endangered wildlife), the management organization may implement a contingency plan, including the option for immediate suppression. Considering 1) the proposed action would result in prescribed fire on a relatively small number of acres, 2) burning as part of this mitigation plan's implementation in the County will most likely occur over a 5-year or 10-year period at a minimum, and 3) the County will adhere to Montana/Idaho Airshed Group advisories and management strategies to minimize smoke emissions, prescribed fire activities would not violate national or state emission standards and would cause very minor and temporary air quality impacts. The greatest threat to air quality would be smoke impacts on sensitive receptors; however, the relative scarcity of sensitive receptors within the County minimizes this potential air quality impact.

In studies conducted through the Interior Columbia Basin Management Project, smoke emissions were simulated across the Basin to assess relative differences among historical, current, and future management scenarios. In assessing the whole Upper Columbia Basin, there was a 43 percent reduction in smoke emissions between the historical and current periods (Quigley and Arbelbide 1997). The projected smoke emissions varied substantially with the vastly different management scenarios. The consumptive demand and passive management scenarios were projected to substantially increase smoke emissions above current levels. The active management scenarios were projected to result in a decrease of current levels.

Although prescribed fire smoke would occur more frequently than wildland fire smoke, since prescribed fires are scheduled during the year, the effects of wildland fire smoke on visibility are more acute. Prescribed fires produce less smoke than wildland fires for comparatively shorter periods, because they are conducted under weather conditions that provide for better smoke dispersion. In a study conducted by Holsapple and Snell (1996), wildland fire and prescribed fire scenarios for the Columbia Basin were modeled. In conclusion, the prescribed fire scenarios did not exceed the EPA particulate matter (PM 10) standard in a 24-hour period. Similar projections were observed for a PM 2.5 threshold. Conversely, all wildland fire scenarios exceeded air quality standards. Similar responses were reported by Huff *et al.* (1995) and Ottmar *et al.* (1996) when they compared the effects of wildland fire to prescribed fire on air quality. The impacts of wildland fire and management ignited prescribed fire on air quality vary because of the differences in distribution of acres burned, the amount of fuel consumed per acre (due to fuel moisture differences), and the weather conditions in which typical spring and fall prescribed burns occur. This analysis reveals wildland fire impacts on air quality may be significantly greater in magnitude than emissions from prescribed burns. This may be attributable, in part, to the fact that several states within the project area have smoke management plans requiring favorable weather conditions for smoke dispersion prior to igniting wildland fires (Quigley and Arbelbide 1997).

Chapter 4: Summaries of Risk and Preparedness

4 Overview

4.1 Wildland Fire Characteristics

An informed discussion of fire mitigation is not complete until basic concepts that govern fire behavior are understood. In the broadest sense, wildland fire behavior describes how fires burn; the manner in which fuels ignite, how flames develop and how fire spreads across the landscape. The three major physical components that determine fire behavior are the fuels supporting the fire, the topography in which the fire is burning, and the weather and atmospheric conditions during a fire event. At the landscape level, both topography and weather are beyond our control. We are powerless to control winds, temperature, relative humidity, atmospheric instability, slope, aspect, elevation, and landforms. It is beyond our control to alter these conditions, and thus impossible to alter fire behavior through their manipulation. When we attempt to alter how fires burn, we are left with manipulating the third component of the fire environment, the fuels which support the fire. By altering fuel loading and fuel continuity across the landscape, we have the best opportunity to determine how fires burn.

A brief description of each of the fire environment elements follows in order to illustrate their effect on fire behavior.

4.1.1 Weather

Weather conditions are ultimately responsible for determining fire behavior. Moisture, temperature, and relative humidity determine the rates at which fuels dry and vegetation cures, and whether fuel conditions become dry enough to sustain an ignition. Once conditions are capable of sustaining a fire, atmospheric stability and wind speed and direction can have a significant affect on fire behavior. Winds fan fires with oxygen, increasing the rate at which fire spreads across the landscape. Weather is the most unpredictable component governing fire behavior, constantly changing in time and across the landscape.

4.1.2 Topography

Fires burning in similar fuel conditions burn dramatically different under different topographic conditions. Topography alters heat transfer and localized weather conditions, which in turn influence vegetative growth and resulting fuels. Changes in slope and aspect can have significant influences on how fires burn. Generally speaking, north slopes tend to be cooler, wetter, more productive sites. This can lead to heavy fuel accumulations, with high fuel moistures, later curing of fuels, and lower rates of spread. In contrast, south and west slopes tend to receive more direct sun, and thus have the highest temperatures, lowest soil and fuel moistures, and lightest fuels. The combination of light fuels and dry sites lead to fires that typically display the highest rates of spread. These slopes also tend to be on the windward side of mountains. Thus these slopes tend to be “available to burn” a greater portion of the year.

Slope also plays a significant roll in fire spread, by allowing preheating of fuels upslope of the burning fire. As slope increases, rate of spread and flame lengths tend to increase. Therefore, we can expect the fastest rates of spread on steep, warm south and west slopes with fuels that are exposed to the wind.

4.1.3 Fuels

Fuel is any material that can ignite and burn. Fuels describe any organic material, dead or alive, found in the fire environment. Grasses, brush, branches, logs, forest floor litter, conifer needles, and home sites (the structures) are all examples. The physical properties and characteristics of fuels govern how fires burn. Fuel loading, size and shape, moisture content and continuity and arrangement all have an affect on fire behavior. Generally speaking, the smaller and finer the fuels, the faster the potential rate of fire spread. Small fuels such as grass, needle litter and other fuels less than a quarter inch in diameter are most responsible for fire spread. In fact, “fine” fuels, with high surface to volume ratios, are considered the primary carriers of surface fire. This is apparent to anyone who has ever witnessed the speed at which grass fires burn. As fuel size increases, the rate of spread tends to decrease, as surface to volume ratio decreases. Fires in large fuels generally burn at a slower rate, but release much more energy, and burn with much greater intensity. This increased energy release, or intensity, makes these fires more difficult to control. Thus, it is much easier to control a fire burning in grass than to control a fire burning in timber.

Fuels are found in combinations of types, amounts, sizes, shapes, and arrangements. It is the unique combination of these factors, along with the topography and weather, which determine how fires will burn.

The study of fire behavior recognizes the dramatic and often-unexpected affect small changes in any single component has on how fires burn. It is impossible to speak in specific terms when predicting how a fire will burn under any given set of conditions. However, through countless observations and repeated research, the some of the principles that govern fire behavior have been identified and are recognized.

4.2 Jerome County’s Wildland-Urban Interface

Individual community assessments have been completed for all of the populated places in the county. The following summaries include these descriptions and observations. Local place names identified during this plan’s development include:

Table 4.1. Jerome County Communities

Community Name	Planning Description	Vegetative Community	National Register Community At Risk? ¹
Jerome	City	Rangeland	Yes
Eden	Community	Rangeland	Yes
Hazelton	Community	Rangeland	Yes

¹Those communities with a “Yes” in the National Register Community at Risk column are included in the Federal Register, Vol. 66, Number 160, Friday, August 17, 2001, as “Urban Wildland Interface Communities within the vicinity of Federal Lands that are at high risk from wildfires”. All of these communities have been evaluated as part of this plan’s assessment.

Site evaluations on these communities are included in subsequent sections. In addition, other high-risk areas were evaluated as well, with high-risk attributes emphasized. The results of FEMA Hazard Severity Forms for each community are presented in Appendix II.

4.3 Rangeland Communities in Jerome County

4.3.1 Vegetative Associations

Jerome County lies in the vegetative ecosystem known as the “sagebrush steppe.” The Sagebrush steppe is widespread over much of southern Idaho and the Snake River Plain, as well as across eastern Oregon and Washington, and portions of northern Nevada, California and Utah. The Snake River Plain portion of this ecosystem occurs over a variety of land forms and vegetation types. Native vegetative communities range from vast expanses of grasslands resulting from recent fires, to old-growth sagebrush communities.

The steppe is characterized by a persistently warm and arid environment, that limits non-cultivated vegetative communities to grass and brush rangelands. Dry vegetation and hot, dry and windy conditions has resulted in a rich fire history, with relatively frequent fires. The last decade has seen the proliferation of Cheatgrass (*Bromus tectorum L.*), an invasive grass species that is able to out-compete native bunchgrasses. Cheatgrass responds well to soil disturbance and is found in abundance along roadsides, driveways, new construction areas, and in recently burned areas. Over time, vegetative species composition in unmanaged or non-irrigated land has shifted toward fire prone species, particularly in high use areas where disturbance is common.

Irrigation has led to the conversion of the sage-grass ecosystem to productive agricultural lands in many areas of Jerome County. This has created an agricultural patchwork across the landscape. Depending on crop rotation, farm lands may be irrigated, green and lush, or cured winter wheat. The implications of the wildland-agricultural interface will be discussed further below.

4.3.2 Fuels Assessment

Land ownership in Jerome County is a mix of federal, state and private lands. Large, continuous patches of BLM land extend from the Perrine Bridge area to the east, nearly to the county border. Many private lands in the southern portion of the county are surrounded by BLM lands. Fingers of private land extend into BLM lands in the northern portion of the county. BLM lands become continuous to the north of these private lands. The ownership pattern throughout the county results in an abundance of interface between BLM rangelands and residential areas, farms and businesses.

The BLM rangelands are primarily utilized as forage for domestic livestock and wildlife species dependent on the sage-grassland ecosystem. These rangelands are quite fire prone, with an abundance of native and introduced grass and brush. Areas dominated primarily by grass with scattered sage can be described as Fuel Models 1 or 2 (FM1 and FM2). Fires in grass fuels tend to spread very rapidly, especially when pushed by wind. Sage-dominated fuel complexes can be described as FM6 (for a complete discussion of fuel models, please refer to 3.10.4). Fires in all fuel types can spread rapidly, especially when driven by the wind or when burning in areas with steep slopes. Fires can burn thousands of acres after only a single hour in grass and brush fuels. In heavy brush fuels fires can travel at over eight miles an hour with flame lengths in excess of 50 feet. Fires of this intensity are nearly impossible to control with suppression resources, requiring a change in weather in order to allow crews and support equipment to gain the upper hand.

Agricultural practices in the county can either mitigate or exacerbate wildland fire risk. Depending on crop rotation and time of year, agricultural can contribute to or disrupt fuel continuity across the landscape. When irrigated crops are planted, agricultural activities can

break landscape continuity by creating areas of high live fuel moisture that are unavailable to burn. However, when non-irrigated crops are adjacent to rangelands, these crops add to the fuel continuity across the landscape. Cured wheat or hay fields result in a uniform bed of flashy fuels that support fires with rapid rates of spread and large flame lengths, particularly prior to harvest. Agricultural areas in grain crops can be described as either FM 1, 2 or 3. During the period while grain crops are cured prior to harvest, the mature crops are similar to tall grass (FM 3, greater than 2.5 feet in height). Fires in this fuel type tend to spread very rapidly with large flame lengths. Post harvest fuels are more typical of FM1 or FM2. Flame lengths and rates of spread are somewhat reduced in the post-harvest condition. However, fires in these fuels can still spread rapidly and generate large flame lengths.

The landownership pattern results in a maximization of BLM and private land interface. This in turn results in large areas of wildland-urban and wildland-agricultural interface throughout the county.

4.3.2.1 Ignition Profile

The ignition profile describes how fires start in Jerome County. Natural ignition sources from summertime lightning storms are common throughout southern Idaho. Lightning strikes in light fuels can be extinguished if any precipitation accompanies the storm. However during dry lightning events, storm cells can ignite dozens of fires throughout rangeland areas.

The land ownership pattern of Jerome County increases human activity in rangeland environments, contributing to the probability of fires throughout the county. Residential living and recreational use present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few potential human ignition sources.

Contributing to the ignition profile are accidental ignitions from machinery during harvest and the planned ignitions from burning of residual stubble following grain harvest. Escaped agricultural fires can spread very rapidly and move into surrounding rangelands, into unharvested areas, or toward homes and improvements. Although these burning activities have historically not resulted in significant structural damage, the frequency of burning increases the potential for escaped fire.

Human-caused fire incidents have been decreasing over time on BLM lands across southern Idaho. Fires from human ignitions have been decreasing on federal lands throughout southern Idaho over the last ten years. The reduction in human ignitions can be attributed in part to the aggressive prevention program spearheaded by the rural fire districts, the BLM and the Forest Service.

The combination of human use and a fire-prone environment dramatically increases the probability of wildland fires in Jerome County. The Bacon Pond Fire of 2002 demonstrates the potential for large, wildland fires to burn through rangeland in the BLM-private interface areas of the county. The Bacon Pond Fire was sparked by debris burning near the Highway 93-Interstate 84 junction. The hot, dry, and windy conditions at the time of ignition pushed the fire through cured fuels, burning roughly 10,000 acres before being contained. Fortunately, no homes were lost to the fire.

Not only do large expanses of rangeland fuels create interface risk in the county. Other issues associated with unregulated development, access, and abundance of human-related ignitions increase fire risk. Areas within the county that are at particularly high risk to these and other factors will be discussed in the Community Assessments to follow.

4.3.3 Fire Suppression in Jerome County- A Cooperative Effort

Wildland fire suppression throughout Jerome County can best be described as a cooperative effort between the city and rural fire departments and the Upper Snake River District of the BLM. The abundance of both ignition sources and flashy fuels results in numerous fire starts each year. Rapid and aggressive initial attack is the key to keeping economic loss to a minimum. Local fire departments and the BLM have developed a dependence on one another in the ongoing attempt to control wildland fires before they become a large incident. The scattering of rural resources throughout the county allows for rapid initial attack of most wildland fires regardless of land ownership or fire protection jurisdiction. Quick response by rural forces allows for initial size-up and engagement while BLM forces respond from districts or staging areas. Mutual aid agreements with Jerome City Fire Department, which is also well equipped to engage wildland fires increases suppression capabilities and assures a consistent level of protection is available county-wide. Between 60 to 80% of BLM fires are initially attacked by rural fire districts. If fires grow beyond the capabilities of the rural initial attack ground forces, BLM aerial resources including helicopters and retardant tankers are utilized in containment efforts. The close working relationship between the BLM and the city and county departments is mutually beneficial and essential for reducing wildfire losses.

Recognizing the beneficial relationship between the federal land management and the local fire departments, the BLM has been very pro-active in assisting fire departments in purchasing of equipment and training material through the Rural Fire Assistance program. The BLM administers funding appropriated through The Department of the Interior to enhance the fire protection capabilities of rural and volunteer fire departments. This occurs through training, equipment purchases, and fire prevention work on a cost-shared basis. The DOI assistance program targets rural and volunteer fire departments that routinely help fight fire on or near BLM lands. Grants range from a thousand dollars to a maximum of \$20,000 on a 10% cost share payable through in kind services. This program has benefited Jerome City, Jerome Rural and First Segregation fire departments in augmenting their firefighting capabilities.

4.3.4 Community Assessments

The objective of the community assessments is to determine the extent to which wildland fire threatens the safety of people, homes, infrastructure, and other important resources throughout Jerome County. Assessing fire risk can be challenging, as there are numerous factors that individually or cumulatively define the overall risk to a community or area. Fuel characteristics, ignition sources, topography, proximity of fire protection resources, emergency vehicle access and egress, home construction, presence or absence of survivable space, and water availability are just some of the factors that determine risk.

The community assessments summarize the factors that have been identified as contributing to risk in a given area. Assessments are based on field observation as well as on discussion with local fire department representatives. Fire district jurisdictional boundaries define assessment areas, with high risk areas addressed individually.

By necessity, generalizations need to be made in efforts to assess risk. Each and every homesite is unique, as are the characteristics of the home that contribute to its vulnerability to wildland fire. Thus the assessments attempt to capture the “average” condition, while noting attributes that significantly increase wildland fire risk in specific areas.

Each assessment is followed by a series of recommendations to mitigate the identified risk. The recommendations will then be summarized in Chapter 5: Mitigation Recommendations, along with other recommendations that are applicable to individual fire departments, such as purchase

of equipment. Recommendations targeted at the county level will be identified later in Chapter 5 as well.

Elimination of all risk is not possible, or is it desirable. Attempts at eliminating all risk would compromise the quality of life that Jerome County residents enjoy. Open space, native vegetation, recreation, and biological diversity would be adversely impacted if complete elimination of fire risk were to be the ultimate objective. The mitigation recommendations attempt to reduce risk to people, firefighters, homes and economically important assets at an acceptable level while not compromising the qualities that help define Jerome County.

4.3.4.1 County Overview

The primary concern in the county stems from outlying areas where homes and ranches abut expanses of dry grass and rangeland fuels. The adjacency of wildland fuel to homes or farms increases the potential for economic or property loss.

Lack of access for emergency vehicles is another factor that contributes significantly to the interface fire risk county-wide. This is particularly true of homes situated in the Snake River Canyon, including the Blue Lakes areas and County Club Estates. These areas are currently without structural fire protection, due in large part to access related issues. These areas will be addressed in detail in the fire district assessments to follow.

The majority of homes within the community centers of Jerome, Hazelton and Eden are at low risk to loss from wildfire. This is due in large part to the urban character of these communities, with an abundance of green lawns and paved roads which will not support wildland fire. Most structures associated with the community centers have been designed and constructed with fire-resistant building materials that reduce the potential for fires to transition from wildland or agricultural fires to structure fires. Most residents in the area maintain satisfactory survivable space around structures in the form of green lawns or fire-resistant landscaping. However, there are a number of areas outside the community centers that are at much greater risk due to a number of factors. These specific issues will be addressed below.

4.4 First Segregation Fire District, including the Communities of Eden and Hazelton

First Segregation Fire District provides structural and wildland fire protection throughout its 165 square mile district, including the cities of Eden and Hazelton. The majority of land within the rural protection boundary is agricultural with a component of grass and sage rangeland. Many pieces of BLM land are interspersed throughout the district. Differing land use among private and BLM lands create numerous areas of interface concern, as sage rangelands abut private lands in many areas of the district. The ownership pattern and abundance of ignitions lead to frequent responses to fires in private land-BLM interface areas.

First Segregation has been active in pursuing public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. The district has targeted homes along the private-BLM ownership interface, informing residents and farmers of means by which to protect their homes and crops from wildland fires. This educational program has provided willing residents the information they need to create survivable space and reduce the threat to their homes and property.

4.4.1 Eden

The community of Eden is located on Highway 25, two miles east of the Highway 50-Highway 25 intersection. Land ownership in the Eden area is split between BLM to the north and private agricultural lands to the south. Differing land management objectives and techniques between the federal and private land result in two distinct vegetative types in the Eden vicinity. To the north, the large expanses of BLM rangeland are covered in thick stands of sagebrush and native and introduced grasses. To the south, extensive agriculture create a patchwork of crops, alternating between irrigated fields with high live fuel moistures and non-irrigated crops that become extremely flammable during the summer months. At the far south of the district is the Snake River Canyon. Private ownership is intermixed with BLM ownership along the canyon rim. There is an abundance of brush fuels in and around the canyon rim on both private and BLM lands. These fuels can serve to fuel wildland fire. Anywhere where BLM and private lands meet is the wildland-urban or wildland-agricultural interface.

The lands to the south of the community are relatively flat, with productive soils making it ideal for farming. There is a small cluster of residences near the city center of Eden. However, many citizens of Eden area are larger landowners scattered throughout the surrounding countryside.

Road access to the private lands south of Eden is good, with an abundance of secondary road at one-mile intervals. Most of these roads are located in areas that are at low risk of fire. However the potential for accidental ignition by vehicle use or cigarettes is increased by the presence of dry grasses in ditches along roadways and on vacant lots. Fires originating on the roadways can easily transition to nearby fields in grain crops. Roadway fires associated with Interstate 84 are an issue to the department and will be addressed below. Road names and house numbers are generally present, although rural addressing and road signing is in need of updating. Furthermore, numbers on some rural homes may be difficult to see due to homes being built at the end of long, single-lane dead end driveways.

As mentioned previously, homes, structures and businesses within the community center of Eden are at low risk to wildland fire. Good road access, good water supply, and rapid response times from help to reduce wildland fire threat. Furthermore, most homes maintain adequate survivable space and are constructed with materials that help reduce the threat of fire-related property loss.

There are some homes and outbuildings that are at moderate risk from wildland or agricultural fire south of Eden. The majority of the fire risk in the Eden area comes from annual field burning, debris burning, or other forms of human ignition. The dry nature of the surrounding vegetation and abundance of hot, dry and windy weather greatly increases the possibility of a fire escaping its designated boundaries or igniting neighboring fields and potentially resulting in a fast moving fire. This risk posed to any individual structure is depends largely on the season and status of cropland surrounding homes. Fire can travel through dry, cured grain fields very rapidly, especially when driven by gusty winds. Fires in these fuel types leave very little time to prepare a home to withstand a wildfire event. Thus, it is critical that all precautionary measures take place prior to the fire season.

BLM lands North of Eden are at much higher risk for development of large wildland fire due to large expanses of continuous brush and grass fuels and reduced access. The BLM lands and other concern areas will be addressed in High Risk Areas to follow.

4.4.2 Hazelton

The community of Hazelton is located on Highway 25, midway between The Highway 25-Higway 50 intersections and Interstate 84. Like Eden, land ownership patterns in the vicinity of

the community dictate land use and vegetative structure. Large, private farms extend to the south of Hazelton to the Snake River Canyon, with large pieces of BLM rangelands to the north. The most prominent feature of the community is Wilson Lake just to the north Hazelton, which is a popular site for summertime recreation. At the far south is the Snake River Canyon, where steep slopes and dry fuels can lead fast-moving fires.

Hazelton and Eden are very similar in many respects in regard to wildland or agricultural fire threat. The community of Hazelton itself is a low risk to wildland fire. The abundance of green lawns, roads, sidewalks and the overall urban character of the community minimize the potential for fire to result in property loss. Like Eden, road access is quite good in most areas, although signing and rural addressing is in need of updating in some areas. The fire risk to homes and property south of town is dependent on crop rotation and presence of survivable space around homes and other buildings. Ignition sources are abundant throughout the county as are flashy fuels. This combination leads to an abundance of fire starts that can quickly spread through dry ditches, rangelands and wheat fields.

Wilson Lake north of Hazelton is a popular recreation area, offering a boat launch, swimming area and a number of picnic sites. Grass in the vicinity of the picnic area is watered and green, reducing the potential for fire starts originating in bar-be-cue areas. However, dry brush and grass fuels are abundant on the north side of the lake. Ignitions from recreational users on this end of the lake could quickly develop into large wildland fires in the large sections of BLM land that boarder the lake.

4.4.2.1 High Risk Areas

4.4.2.1.1 North of Wilson Lake

BLM rangelands north of Wilson Lake pose a wildfire risk to homes and resources in the area. The mature sage and grass fuels are capable of burning at high intensities with very rapid rates of spread when pushed by the wind. Compounding risk is the unregulated development that has been occurring in the area. A number of homes have recently been built or moved into the area. This development has not been coordinated with First Segregation. In fact, it was unknown that the area was occupied by residents until recently. In the event of a wildland fire, department personnel would not have been aware of the homesites in the area and thus would not provide any type of fire protection.

Road access in this area is very poor, with narrow unimproved dirt roads accessing the homes. These roads would not accommodate large emergency vehicles. Only small, wildland brush engines would be capable of accessing the homes. Homes in the area lack any type of rural addresses. The combination of these factors would slow response times to incidents in the area, if not preclude engagement all together. Furthermore, there is no readily available water source in the area. This scenario highlights the need for Planning and Zoning to inspect new developments in order to assure road construction standards are followed. If inspection reveals inadequate construction, the Building Department should be notified to enforce road construction requirements.

4.4.2.1.2 Hunt Section and Area between 1200E to 2600E

The primary concern along the northern border of the district is the interface of private lands to BLM rangelands. Areas to the east of 2600E are protected by the West End Fire District in neighboring Minidoka County (refer to the Minidoka County Fire Plan for further discussion of this area). BLM ownership extends for miles north of the district, with very few breaks in fuel

continuity. This increases the potential for large wildland fires moving from BLM lands to private lands. The greatest potential for infringement is in the Hunt area, where private lands are completely surrounded by the BLM. Thousands of acres of crops could be lost during a large scale fire event, resulting in a significant economic impact to the local economy. Such an event would pose a significant risk to homes, outbuildings, infrastructure and other resources in the area.

Further increasing fire risk in this area is the lack of access to the northern portion of the fire district. There are few opportunities for access to the Hunt-Cinder Butte area from Eden and Hazelton. This results in decreased response times for suppression resources. East Hunt road is surrounded by heavy brush fuels that could compromise access or egress in the event of a large fire. Although there are alternate routes to the west, the lack of travel routes results in limited tactical opportunities for suppression activities.

Access is also an issue to the north of the North Side Main Canal. There are very few access points across the canal, reducing the opportunities for suppression action.

4.4.2.1.3 Snake River Area

Homes perched on the rim of the Snake River canyon are at an increased risk to wildland fire. The canyon is vegetated by patches of native fuels that are capable of supporting wildland fire. The canyon walls are steep, dropping over 100 feet to the drainage bottom below. The lack of access reduces opportunities for suppression action in the river area. The gusty winds common of the Snake River Canyon are quite capable of pushing fire outside the canyon to the homes above. Fortunately, many homes have green, well-maintained lawns that provide adequate survivable space in the event of fire emerging from the canyon. However, there are individual homes that lack survivable space.

4.4.2.1.4 Highway 84 Corridor

First Segregation responds to numerous fires along the Interstate 84 corridor each year. Many of these fires are west of the district, in the BLM lands between First Segregation and Jerome Rural fire protection districts. The abundance of ignitions along the highway pulls resources from the fire district, increasing response time in the event of an incident in other areas of the district.

4.4.3 Mitigation Activities and Recommendations:

The following is a short list of activities that can help reduce the risk associated with wildland fire in the First Segregation district. A comprehensive list of recommendations will be presented in Tables 5.1 and 5.2 in Chapter 5: Mitigation Recommendations.

- **Public education** will continue to be a cornerstone of mitigation programs throughout the district and county. Individual home site evaluations can increase homeowners' awareness and provide the impetus to take measures to improve the survivability of structures in the event of a fire. "Living with Fire, A Guide for the Homeowner" or other literature distributed through the national Firewise program is an excellent tool for educating homeowners as to the steps to take in order to create an effective survivable space.
- **Improve road access and establish rural addressing** throughout the district and county, particularly in areas of recent development north of Wilson Lake.

- **Enforce fire and building codes** and ensure all roads are built to county specifications.
- **Continue to work with rural homeowners** to identify risk areas and provide recommendations for reducing risk.

Specific recommendations for increasing fire district capabilities will be included in the Mitigation Activities Section of the plan.

4.5 Jerome City Fire District

Fire protection within the city limits of Jerome is provided by the Jerome City Fire Department. The city district is surrounded by the Jerome Rural Fire District. The two departments work closely with one another to provide good coverage for county and city residents. The City of Jerome has been experiencing steady growth over the years. An assessment of the City of Jerome follows.

4.5.1 City of Jerome

The City of Jerome is located north of Interstate 84 in western Jerome County. Jerome is accessed via a number of primary travel routes, including Highway 93 from Twin Falls, Highway 25, and off Interstate 84 at exit 165 and 168. As mentioned, the City of Jerome is protected by the Jerome City Fire Department. The department is staffed full-time with paid employees. The staffing and suppression resources within the department help to reduce the fire risk to the city.

The urban character and well-developed infrastructure of the city helps maintain a low level of wildland fire risk to the city. The abundance of streets, sidewalks, green lawns and lack of wildland fuels results in a very low threat to people or property from fires infringing upon Jerome. There are a number of abandon and vacant lots within the city limits that have significant accumulations of dead, cured grass and weeds that do pose some degree of threat. The city does enforce a vegetation code that requires owners of lots to manage vegetation to reduce the incidents of unexpected fires. Burn permits are issued for individuals who opt to burn cured vegetation within the city limits. Although these measures help to reduce the potential for fires, heavily vegetated vacant lots can be found within the city. The Jerome City Fire Department has identified these areas and is able to respond with the necessary equipment before fires in these areas become threatening to life or property.

Jerome is serviced by a hydrant system that helps assure ready access to water in most areas of the city. Most streets are well signed, and house numbers are generally present throughout the area. However outside city limits, road signage and rural addressing is much less consistent. Water availability also becomes more limiting, sometimes requiring significant travel distances to a re-fill site, reducing effective water supplies.

4.5.2 Mitigation Activities and Recommendations

Although the City of Jerome is at relatively low risk to wildfire, there are a number of roles that Jerome City Fire Department can fill and activities in which the department should be engaged in to further reduce wildland and structural fire threat throughout the Jerome County. Structural and wildland fire safety extends beyond district or county boundaries and needs to be addressed in a collaborative cross boundary manner. A comprehensive list of recommendations will be presented in Tables 5.1 in Chapter 5: Mitigation Recommendations.

- **Public education** will continue to be a cornerstone of mitigation programs throughout the district and county. Jerome City can take a lead role with other the other county fire

districts in outreach campaigns to homeowners and landowners throughout the county as well as participate in mitigation projects, regardless of jurisdiction.

4.6 Jerome Rural Fire District

Jerome Rural Fire District is responsible for structural and wildland fire suppression throughout the majority of the western portion of Jerome County. Jerome has been experiencing growth over the last decade, associated primarily with interstate commerce. The abundance of interstate and highway travel in the area has led to an increase in ignitions associated with the travel corridors.

There are a number of interface concern areas for the Jerome Rural district. These concerns stem from lack of vehicle access in a number of developed areas within the Snake River Canyon. Other concerns are associated with BLM grass and rangelands interfacing with residential developments or with agricultural lands. An assessment of high-risk areas within the district follows.

Fire risk does increase outside city limits, as the potential for large sections of agricultural or wildland fuels abut residential areas. During the summer months, the grasses and crops cure and become available to burn. Annual field burning, debris burning, and other human ignitions elevate the risk where these fuels abut homes or ranches.

The northern portion of the district is bordered by large areas of continuous BLM rangeland that extend for many miles. The uninterrupted, continuous nature of wildland fuels increases the potential for large-scale fire events to spread to cured croplands along the wildland-agricultural interface. Such an event could lead to significant economic loss and possible structural loss where survivable space has not been created.

4.6.1 High Risk Areas

4.6.1.1 Big-Little Ranches and Sawtooth Acres

This rapidly-expanding area is accessed off Golf Course Road, between the Snake River and Interstate 84. Although Big-Little Ranches and Sawtooth Acres are actually two separate subdivisions, they have essentially merged together to form a single community. The primary access route to Big-Little Ranches is Silver Beach Road. The developments are comprised of roughly 120 homesites at present and are expected to grow to more than 200 homes once completely built. The subdivisions are surrounded by BLM rangelands to the east and undeveloped lands to the west.

Ignition probability in the area is high, with heavy traffic on both Route 79 and along Interstate 84. Roadway fires are very common along the interstate throughout all of southern Idaho. Compounding the ignition risk is the presence of a rest area within a few hundred yards of the homes. Concentrated use increase the probability of ignitions associated with interstate travelers. To the east of the development are wide expanses of BLM rangeland that have historically burned on an almost yearly basis. These BLM lands are a popular recreation area for off-road motor vehicle use. Highway 93 from Twin Falls has also been responsible for numerous ignitions over the years on BLM lands. The combination of abundant ignitions and grass and rangeland fuels increases the risk of fast-moving fires infringing on the development.

Although access to individual homes in the development is good, access to the community itself is marginal. There is only one primary route into the community, limiting opportunities for ingress

or egress in the event of a rangeland fire. Furthermore, there is no pressurized hydrant system within the community, increasing the risks associated with both wildland and structural fires.

4.6.1.1.1 Big-Little Ranches Communities-at-Risk Project

Recognizing the potential for rangeland fire infringement on the community, the Jerome Rural Fire Department has worked with the BLM in designating Big-Little Ranches as a community at risk. Currently, Jerome Rural is working in conjunction with community residents in establishing a green buffer strip along the east side of the community, from Interstate 84 to County Route 79. The project is funded by the BLM and implemented by Jerome Rural personnel and participating residents. The project includes mowing of brush followed by an herbicide application to remove Cheatgrass and other flammable grasses and forbs. A mix of crested wheatgrass and other less flammable species will then be planted in order to create a strip of less flammable vegetation. The buffer will range in width from 300 feet to 2500 feet, depending on landowner participation. This buffer will help to reduce the potential for fast moving rangeland fire from jeopardizing homes in the development.

4.6.1.2 Devils Corral

The BLM rangelands immediately north of the Snake River and to the east of Highway 93 is referred to locally as Devils Corral. Devils Corral is a very popular recreation area for off-road vehicle use and other recreational activities. The close proximity of Twin Falls and Jerome leads to heavy public use. Highway 93 also passes through the area, providing a corridor for road-related ignitions. This area has burned repeatedly over the years and is now largely dominated by Cheatgrass and other highly ignitable vegetation. Although this area is outside the Jerome Rural protection boundary, fires in the Devils Corral area can threaten homes to the east in the Big-Little Ranches area. Jerome rural frequently responds to fires in Devils Corral in cooperation with the BLM.

4.6.1.3 Blue Lakes Area

The Blue Lakes area is a residential development of roughly 30 homes tucked into the Snake River Canyon to the west of Highway 93. Access to the homes is via an exceptionally steep, single lane access road that is controlled by a traffic light. The road is so narrow that it cannot accommodate more than a one vehicle at a time. There are also a number of extremely tight switch back that must be negotiated before reaching the homes. Because of these accessibility issues, Jerome Rural has not been able to extend structural fire protection to homes in the Blue Lakes area, dramatically increasing fire risk to homes and residents.

Fuels in this area of the canyon are quite problematic as well. Sage and grass fuels are common in the area. Although some homes are surrounded by green lawns that provide an adequate survivable space, there are a number of other homes that are surrounded by dry grass fuels. Furthermore, cedar-shake roofing material and wooden porch and deck material are quite common. The combination of all these factors dramatically increases the risk to property and safety in the Blue Lakes area.

There is an opportunity to improve access to Blue Lakes via Yingst Road, which accesses the area to the west of present road. Opportunities for improved access on Yingst Road are much better, although improvements would take considerable coordination between landowners. The road currently crosses both federal and a number of private lands. However, considering the limited potential for improvement of the Blue Lakes Road, this route is the best available alternative for access improvement incorporation into the Jerome Rural district.

4.6.1.4 Country Club Estates

Country Club Estates is located directly across from Shoshone Falls in Twin Falls County, deep within the Snake River Canyon. Country Club Estates is accessed via Shoshone Falls Road that runs through Devil's Corral, east of Highway 93. Canyon Drive accesses the properties within the canyon. Canyon Drive is quite steep and until recently has not been adequate for emergency vehicle travel. Because of access limitations, Jerome Rural has not been able to provide fire protection for residents of Country Club Estates. However, road improvements that were designed with the input of Jerome Rural will improve access to a degree that will allow access for emergency vehicles. Other improvements, such as the installation of dry hydrants and creation of drafting sites and turn-arounds will help ease some of the fire protection issues that have precluded incorporation into the fire district. Once the work is complete, Jerome Rural is planning on offering coverage to the homes in the area. This will reduce fire risk to homes in the area considerably.

There are other factors that contribute to risk in the area. Wildland fuels are abundant in the canyon bottom, with sage and grass fuels common throughout the area. Many homes have created survivable space around the home. However, there are a number of homes in the area that lack survivable space. Furthermore, some homes have been constructed with highly flammable construction material, including cedar-shake roofs and large decks extending over dry rangeland fuels.

4.6.2 Mitigation Activities and Recommendations

The following is a short list of activities that can help reduce the risk associated with wildland fire in the Jerome Rural Fire District. A comprehensive list of recommendations will be presented in Tables 5.1 and 5.2 in Chapter 5: Mitigation Recommendations.

- **Public education** will continue to be a cornerstone of mitigation programs throughout the district and county. Individual home site evaluations can increase homeowners' awareness and provide the impetus to take measures to improve the survivability of structures in the event of a fire. "Living with Fire, A Guide for the Homeowner" or other literature distributed through the national Firewise program is an excellent tool for educating homeowners as to the steps to take in order to create an effective survivable space.
- **Work with residents in Blue Lakes area** for incorporation into Jerome Rural Fire District. Residents should work with Jerome Rural to develop a strategy to improve road access to homes in the area. Lack of structure protection in the areas dramatically increases the threat to homes in the area.
- **Identify homes in Blue Lakes and County Club Estates as a home defensibility demonstration project.**
- **Continued implementation of Big-Little Ranches communities-at-risk project.**

4.7 Issues Facing Jerome County Fire Protection

There are dozens, if not hundreds of issues that contribute to fire occurrence, strain department resources, and otherwise complicate fire suppression throughout Jerome County. A very short list of some issues that are pervasive throughout the county are presented here.

4.7.1 Recruitment and Retention, Funding, Equipment Needs, Etc.

There are a number of pervasive issues that challenge rural districts within Jerome County. A short list of such issues include recruitment and retention of volunteers, lack of funding for equipment needs, keeping pace increases in training requirements, as well as numerous other factors that test district's abilities. The members of both West End and Jerome County Fire Protection Districts should be recognized for the dedication they have shown and the excellent level of protection they provide for residents throughout the county. Volunteers take time out of their lives every day in order to assure the safety of the community.

The demands on volunteer departments are considerable. Keeping pace with ever-increasing training requirements can lead to burn-out of volunteers who are scantily compensated for their time and efforts. Keeping pace with the growing needs of the communities the districts serve is a constant challenge as well. Although there are many potential funding sources available for rural districts to acquire equipment and other needs, grant writing and chasing of funding sources takes considerable time and effort. Recommendations that can help to reduce these challenges will be presented in the Chapter 5: Mitigation Recommendations to follow.

4.7.2 Road Signage and Rural Addressing

The ability to quickly locate a physical address is critical in providing services in any type of emergency response. Minutes can make the difference in home survival during fire events or life and death during medical emergencies. Accurate road signage and rural addressing is fundamental to assure the safety and security of Jerome County residents. Currently, there are numerous areas throughout the county that are lacking road signs, rural addresses or both. Rural addressing has not yet been electronically streamlined due to a lack of training and lack of the necessary computer hardware and software. Signing and addressing throughout the county needs to be brought up to NFPA and International Building Code (IBC) standards in order to assure visibility and quick location. New subdivisions should be posted with both road names as well as grid addresses to assure consistency throughout the county.

4.7.3 Dispatching and Radio Communications

Emergency calls in Jerome County are dispatched through the Southern Idaho Regional Communications Center (SIRCOMM) in Jerome, Idaho. This centralized dispatch system has been adequate, although there are perceptions of limitations to the system. However, there are sufficient tactical channels for the present time if users (Agencies) employ the Incident Command System to minimize radio usage. When this is done, the 4 tactical channels that cover Jerome County are adequate. It is necessary to address this issue in order to assure clear lines of communication are available to the maximum extent possible. As communities extend further into the wildland urban interface, traffic on the SIRCOMM systems will inevitably increase.

4.7.4 Development of County-wide Burn Permit Policy

Currently, there is no county-wide burn permit system. The issues associated with agricultural burning that have been identified throughout this document include increased call volume, reduced visibility that has contributed to vehicle accidents in recent past, and the suppression cost of extinguishing escaped agricultural fires. Agricultural field burning adds to call volume each year, with costs transferred to the tax paying public. Some landowners feel that a burn permit policy is unnecessarily restrictive. However, there are significant risks associated with the use of fire adjacent to expanses of flammable vegetation under certain scenarios.

For many growers, the practice of burning crop residues is not only practical but necessary for the control of certain diseases, insects and weeds. In 2003, the Idaho State Department of Agriculture enacted rules specifically designed to lower the impacts of crop residue burning. The department established a set of rules for Idaho growers. However, these rules are voluntary. There is no means of enforcement if growers are found to burn outside these rules.

Rural fire departments typically observe the State of Idaho Closed fire season between May 10 to October 20. During this time, an individual seeking to conduct an open burn of any type shall obtain a permit to prescribe the conditions under which the burn can be conducted and the resources that need to be on hand to suppress the fire, from a State of Idaho fire warden. Although this is a state-wide regulation, agricultural burning has largely been exempt from these provisions. Tackling this issue is difficult. Typically, the duty falls to the chief of whichever fire protection district the burning is planned for. However, this leads to an increased burden on the fire chiefs, who are already juggling other department obligations with obligations to work and to home. There is also considerable confusion on the part of the public as to when a permit is necessary and the procedure for which to obtain the permit. The best-intentioned citizen may unknowingly break this law for a lack of understanding.

The BLM does ask that those intending to burn apply for a burn permit through the BLM office. However, there is frequently many more burns conducted than permits issued. Furthermore, there is no liability in the event of non-compliance and subsequent escaped burns. Approved permits are then forwarded to the corresponding rural fire departments for their information. The information provided to the fire districts is very general and does not include physical address of the burn location. Including a physical address in addition to a legal description would assist fire districts. Addressing agricultural and debris burning issues will take considerable effort and discussion between all involved parties.

4.7.5 Railroad Ignitions

There is currently one active railways within Jerome County, the Eastern Idaho lines that pass through the northern portion of the district and the line that runs southeast from Jerome to Rupert, where it then splits into two lines, one continuing on into Heyburn and Burley and the other heading west through Paul and into Jerome County. The rail lines have been the source of countless ignitions in both the West End and Jerome County districts. Although there are avenues for billing the rail lines for train-related fires, these have not been pursued because of lack of cooperation with the rail company. The cost of suppressing these railroad fires is transferred to the tax payers. Since the railroad issue has been a problem not only in Jerome County but surrounding counties as well, a joint letter from multiple counties may provide the impetus for the rail carrier to agree on an equitable compensation agreement that can help offset the cost of suppressing train-related fires.

4.7.6 Lack of Emergency Water Supplies

In many areas of Jerome County, there are no readily accessible, year-round water resources available for use by local fire districts. Thus, it is necessary for firefighters to keep large amounts of water loaded on trucks at all times. In the event of a larger fire situation, additional water supplies must be transported to the site. The Jerome County fire districts feel that establishing permanent augmentations to emergency water supplies is necessary throughout the County. This includes establishment of pressurized water delivery systems in subdivisions as well as establishment dry hydrants and drafting sites where immediate access to water is limited. Retrofitting dependable, year-round irrigation water sources with necessary fittings for use by emergency response equipment would also be highly beneficial. Once developed, these water

sources need to be mapped and use agreements need to be made between landowners, rural departments, and the Bureau of Land Management.

4.8 Current Wildfire Mitigation Activities Jerome County

4.8.1 Bureau of Land Management Communities-at-Risk Program

The Bureau of Land Management has identified communities that are at risk of wildland fire in areas of Jerome County. As funding becomes available, fuels reduction projects are proposed and implemented through rural fire districts around these at-risk communities. The Big-Little Ranches fuels reduction project is nearing completion and will yield positive results over the long-term. BLM communities-at-risk fuels reduction projects typically include creating a fire resistant buffer around communities and access routes by cutting and removing vegetation. Other areas where there are high value resources at risk may also be good candidates for at-risk communities in the future.

4.8.2 Big-Little Ranches Communities-at-Risk Project

The Big-Little Ranches and Sawtooth Acres subdivisions are located to the south and east of Jerome. This area contains many individual homes that could be impacted by fire from the adjacent BLM lands. Fire occurrence in these BLM lands is quite high due to the proximity of travel corridors, recreational and general human use. The dominant fuels in the treatment area and surrounding the subdivisions are annual grass and forbs. The occurrence of wildland fire in the area has been dramatically shortened because of the early flammability and rapid rate of spread of Cheatgrass. The Jerome Rural Fire District has been working in conjunction with the BLM and local residents to reduce the threat to the area through a communities-at-risk project. The goals and objectives of the Big-Little Ranches wildfire mitigation effort are to: (1) evaluate the hazards of wildland fire within the assessment area and identify specific actions that could reduce the risk through vegetative manipulation projects, (2) Provide coordination and funding support to improve upon community service infrastructure to gain compliance with NFPA and NWCG standards, (3) Promote fire wise practices through the development and promotion of a community-wide outreach program and (4) implementation of a community-wide wildfire training program for increased public and firefighter safety.

4.9 Fire Fighting Resources and Capabilities

The Fire Fighting Resources and Capabilities information provided in this section (3.4) is a summary of information provided by the Rural Fire Chiefs or Representatives of the Wildland Fire Fighting Agencies listed. Each organization completed a survey with written responses. Their answers to a variety of questions are summarized here. ***In an effort to correctly portray their observations, little editing to their responses has occurred.*** These summaries indicate their perceptions and information summaries.

4.9.1 Wildland Fire Districts

4.9.1.1 Upper Snake River BLM, Twin Falls District

Shoshone	Duty Location	400 West F Street	83352
Bellevue	Duty Location	11053 Highway 75	83313
Carey	Duty Location	20548 North Main	83320

Boundary Description of Twin Falls District:

The east boundary of the District starts at the Utah border and goes north along the Range/Township line dividing Range 28 and Range 29; stair steps around the Sublett Division of the Sawtooth Forest and the Sublett Range to the boundary of Cassia and Power County; goes due west for approximately 8 miles along the county line; turns due north to the Snake River; follows the Snake River to approximately one mile southwest of the city of American Falls; turns due north for three miles along the Township/Range line dividing Range 30 and 31; turns due west on the southern border of Sections 24, 23, 22, 21, 20 and 19 of Township 8S, Range 30E; the southern border of Sections 24, 23, 22, and 21 of Township 8S, Range 29E; where the line, meeting BLM administered ground turns north and stair steps to Highway 93, approximately 7 miles northeast of the Craters of the Moon National Monument and Preserve.

The north boundary starts at this point and stair steps in a southwest direction to the northwest corner of the Craters of the Moon National Monument and Preserve; turns to a westerly direction and ties to the Blaine County boundary line just east of Blizzard Mountain; follows the Blaine County line north and then west to where the Blaine County line meets the Elmore County line.

The west boundary starts at this point and continues to follow the Elmore County line in a southern direction to the southwest corner of Section 31 of Township 2N, Range 12E; turns east for five miles; stair steps in south west direction to southwest corner of Section 6 of Township 1S, Range 10E; follows the Township/Range line due south to King Hill Creek; follows King Hill Creek to it's confluence with the Snake River; follows the Snake River to the west until it meets the Township/Range line between Range 8E and Range 7E; turns south along the Township/Range line to the border of the Saylor Creek Air Force Range; turns west following the boundary of the Saylor Creek Air Force Range; turns south for two miles along the boundary; turns to the west and ties into the Bruneau River; follows the Bruneau River south across the Nevada border to the boundary of Humboldt National Forest.

The south boundary starts at this point and continues to the east along the Forest boundary until it meets the Idaho state line; follows the Idaho/Nevada and Idaho/Utah state lines until it meets the east boundary of the District.

There is approximately 3.9 million acres of ground administered by the BLM within the defined boundary of the District. Sage grouse and sage grouse habitat is a primary issue for the District. Lepidium is also a major issue but is concentrated in a small area of the Jarbidge resource area.

Personnel: The fire program staff totals 212 individuals, including 29 permanent employees, 35 career-seasonal employees who work up to nine months each year, and 148 seasonal employees on staff from roughly June to September. These are all paid staff members trained in wildland fire, but not in structure protection.

Apparatus List:

Shoshone

Table 4.2. Upper Snake River BLM Equipment List: Shoshone.

Identifier	Description	Make	Water Capacity	Pump GPM
E403	Type 4 Engine	International 4070	900	100
E405	Type 4 Engine	International 4070	875	90
E408	Type 4 Engine	International 4070	875	90
E411	Type 4 Engine	Freightliner FL70	875	160
E420	Type 4 Engine	International 4070	850	160

Table 4.2. Upper Snake River BLM Equipment List: Shoshone.

E421	Type 4 Engine	International 4070	850	100
E422	Type 4 Engine	International 4070	850	145
E423	Type 4 Engine	Freightliner FL70	900	100
E682	Type 6 Engine	Ford F-550	290	80
E685	Type 6 Engine	Ford F-550	290	85
E690	Type 6 Engine	Ford F-550	280	80
E692	Type 6 Engine	Ford F-550	290	80
E694	Type 6 Engine	Ford-450 SD	295	80
E695	Type 6 Engine	Ford-450 SD	295	90
W24	Type 2 Tender	Freightliner F9000	3500	750
Contract Dozer	Type 2 Dozer	Varies	N/A	N/A

Bellevue**Table 4.3. Upper Snake River BLM Equipment List: Bellevue.**

Identifier	Description	Make	Water Capacity	Pump GPM
E415	Type 4 Engine	Freightliner F170	875	90
E418	Type 4 Engine	International 4070	875	100
E684	Type 6 Engine	Ford F-550	290	85
W21	Type 2 Tender	Ford F9000	3000	450

Carey**Table 4.4. Upper Snake River BLM Equipment List: Carey.**

Identifier	Description	Make	Water Capacity	Pump GPM
E402	Type 4 Engine	International 4070	900	95
E414	Type 4 Engine	Freightliner FL70	875	90
E683	Type 6 Engine	Ford F550	290	85
Contract Dozer	Type 2 Dozer	Varies	N/A	N/A

Burley**Table 4.5. Upper Snake River BLM Equipment List: Burley.**

Identifier	Description	Make	Water Capacity	Pump GPM
E419	Type 4 Engine	International 4070	900	95
E416	Type 4 Engine	Freightliner FL70	875	90
E678	Type 6 Engine	Ford F550	290	85
W22	Type 2 Tender	Ford F9000	3000	450
E404	Type 4 Engine	International 4070	900	95
E410	Type 4 Engine	Freightliner FL70	875	90
E681	Type 6 Engine	Ford F550	290	85

Malta/Almo**Table 4.6. Upper Snake River BLM Equipment List: Almo.**

Identifier	Description	Make	Water Capacity	Pump GPM
E417	Type 4 Engine	International 4070	900	95
E412	Type 4 Engine	Freightliner FL70	875	90

Kimama

Table 4.7. Upper Snake River BLM Equipment List: Kimima.

Identifier	Description	Make	Water Capacity	Pump GPM
E406	Type 4 Engine	International 4070	900	95
E413	Type 4 Engine	Freightliner FL70	875	90
E688	Type 6 Engine	Ford F550	290	85

Rogerson

Table 4.8. Upper Snake River BLM Equipment List: Rogerson.

Identifier	Description	Make	Water Capacity	Pump GPM
E424	Type 4 Engine	International 4070	900	95
E407	Type 4 Engine	Freightliner FL70	875	90
E693	Type 6 Engine	Ford F550	290	85
W23	Water Tender	Ford F9000	3000	450

Air Resources:

Helicopter: The district has an A-Star medium helicopter capable of carrying 130 gallons of water on contract from June to October with a 10 member helitack crew. U.S. Forest Service Helitack crews are stationed at Hailey and are available for assistance if needed. Additionally, there are other helicopter resources equipped for fire missions that are available on a aircraft-rental-agreement (ARA) basis.

Fixed-Wing: The district has an AeroCommander 500S fixed-wing aircraft, staffed by a pilot and the air attack supervisor. The air attack supervisor coordinates aerial firefighting resources and serves as an observation and communications platform for firefighters on the ground.

Tanker Base: The district's Tanker Base consists of 4 contract personnel, 1 Aviation Manager, 1 Tanker Manager, 2 Single Engine Air tanker (SEATS) managers. This base is located in Twin Falls but has the capability of setting up 5 remote bases throughout the district at any time. This base is also capable of serving Type 1 heavy air takers when needed.

Air Tankers: There are typically 2 SEATS (Air Tracker 802F) on contract in Twin Falls capable of carrying 800 gallons of retardant during the fire season. There are also 2 SEATS (Air Tracker 802) located in Boise and Pocatello.

4.9.2 Rural Fire Districts

4.9.2.1 First Segregation Fire District

Donald Utt
208-825-5725 or 208-420-6555
firstseg@pmt.org
235 East Wilson Avenue
Eden, ID 83325

District Summary: The Fire District covers 165 square miles. We cover the towns of Eden and Hazelton. We also cover 22 miles of I-84. The District is made up of Rural-Urban area. The District is mainly farm land and wildland. The wildland is made up of grass and sagebrush.

Priority Areas:

Residential Growth: Under 8% growth

Communications: Radio dispatched by Southern Idaho Regional Communications Center in Jerome, Idaho

Burn Permit Regulations: All wildland permits are from the BLM. Eden and Hazelton permits by the Fire District.

Effective Mitigation Strategies: None

Education and Training: Training held once per month.

Cooperative Agreements: With the BLM, City of Jerome, and with Jerome Rural Fire District.

Current Resources:

Station #1

Year	Make	Model	Tank Capacity	Pump Capacity
1962	International	162	1000 gal	750
1965	Ford	F750	1500 gal	250
1997	Ford	F350	250 gal	105

Station #2

Year	Make	Model	Tank Capacity	Pump Capacity
1991	Dodge		250 gal	105
2004	Kenworth	Pumper-Tanker	2500 gal	1000

Future Considerations: Build a new Fire Station in Eden for more equipment. More training for the firemen on urban-wildland fires.

Needs:

- New Fire Station
- New Fire Truck (same size as 2004 Kenworth)
- More Brush Trucks, small and heavys
- More manpower

4.9.2.2 Jerome Rural

143 East Ave. A
Jerome, Idaho 83338
(208) 324-7468

District Summary:

8 North South to Canyon wall
5 West East 900 East

Jerome rural fire district is a volunteer fire department with 16 volunteers, that is responsible for structure, wildland and agricultural fires in the district.

Priority Areas: Cross road point's development substation ladder truck update existing trucks. Update Equipment. Recreational on BLM urban development.

Effective Mitigation Strategies: None

Education and Training: Training held once per month.

Cooperative Agreements: Wendell, Gooding, Bliss, Eden, Hazelton, Shoshone, Jerome City, BLM

Current Resources:

Year	Make	Truck #	Tank Capacity	Pump Capacity (gpm)
1990	Ford	52303	3000	750
1989	Kenworth	52304	2700	750
2000	Ford	52305	2800	750
2000	Ford	52901	Hazmat/command	
1988	Ford	52801	300	350
1992	Ford	52802	300	350
1990	International	52803	900	350
1982	Ford	52101	1000	1250

4.9.2.3 Jerome City

Jerome City Fire Department

142 East Ave. A
Jerome, ID 83338

Station #1

142 East Ave. A
324-8189

Station #2

20 West 200 South
324-2323

Station #3

114 East Ave. A
324-8189

Written description of District (boundaries, size, special features within district):

Jerome City Proper

Mutual Aid with eight surrounding Fire Districts

All Hazard Agreement with six surrounding counties

Station description(s) (Hours staffed, size, facilities, etc.):

Station #1, Staffed 24 Hours, 3,280 Sq. Ft.

Station #2, Staffed 8hrs. Mon-Fri, Jan 2005 24 Hours

Station #3, Not Staffed

Protection responsibilities including structure, wild land, agricultural (see attached sample):

Public Safety, City of Jerome

Rescue Services, county wide as called.

Assist with mutual aid when called.

Personnel: Number of personnel, Paid or volunteer staff, structural and/or wildland qualified:

9 Career

25 Paid Call

Working relationship with other agencies, and mutual aid agreements (which departments and agencies, and what services they provide, including training):

Mutual Aid with;

1. First Segregation Fire District
2. Hazelton City
3. Jerome Rural Fire Protection District
4. City of Wendell
5. Wendell Rural Fire Protection District
6. City of Gooding
7. Gooding Rural Fire Protection District
8. City of Shoshone
9. Wood River Fire Protection District
10. Hagerman Fire Protection District
11. Bliss Fire Protection District

All Hazard Agreements

1. City of Rupert
2. Buhl Joint Fire Protection Board
3. County of Cassia
4. Gooding Rural Fire District
5. City of Burley
6. North Cassia Rural Fire Protection District
7. Raft River Fire Protection District
8. Minidoka County Fire Protection District
9. Albion Fire Protection District
10. Oakley Fire Protection District
11. Minidoka County
12. Jerome County
13. 1st. Segregation Fire District
14. Jerome Rural Fire District

Top resource priorities to advance the department:

1. Training,
2. Replace, 1975 Engine
3. Maintain present brush trucks

Resources in the district most at risk of loss from wildland fire:

1. Vacant properties with dry vegetation
2. Some properties with potential exposures to structures and or properties.

Highest risk “problem area” in the district in regards to wildland fire (bad urban-interface areas, etc.):

1. Fire advancement into structures.

Equipment Description:

Truck #	Assigned Station	Year	Make/ Model	Capacity (gallons)	Pump capacity (GPM)	Structure, Wildland, Haz. Mat., Amb., Other
51-105	#1	1995	KME	750	1500	Structure W/Class A Foam
51-104	#1	1975	American La France	500	1250	Structure
51-103	#2	1963	American La France	300	1000	Structure / Reserve
51-502	#2	2001	American La France	300	1500	Structural / Quint / W/Class A foam, 75 ft. Ladder
51-801	#2	1994	Chev.	150	120	Brush
SERC 4	#2	1990	Ford	N/A	N/A	Regional Hazmat Truck
51-501	#3	1962	American La France	N/A	N/A	85 ft. Reserve Ladder
51-702	#3	1988	GMC	200	120	Brush / Utility
51-703	#3	2003	International	N/A	N/A	Heavy Rescue
51-603	#1	2003	Chev.	N/A	N/A	Command
51-604	#2	2004	Chev.	N/A	N/A	Command / Response

The biggest operational challenge facing the district:

1. As our city grows we have less paid call commitment. The retention and commitment of is lacking on the individuals and their employees. Very few employers allow employees to leave there job to respond to an emergency. Therefore we have to rely more and more on career staffing. We have tried to find people who work shifts and are available during the day. We currently average 13.5 firefighters during the day and 22 after working hours.
2. Weekend and Holidays are another exception to the rule as the newer generation tend to not stay in town and try to get away as much as possible. This again leads back to the need for career personnel.

Chapter 5: Treatment Recommendations

5 Overview

Critical to the implementation of this Wildland-Urban Interface Wildfire Mitigation Plan will be the identification and implementation of an integrated schedule of treatments designed to reduce the potential for wildland fire loss throughout Jerome County. The treatments that are outlined in the following text are designed to address wildfire vulnerabilities that have been identified throughout all stages of the planning process. Local knowledge of current conditions fire risks provides the basis for the proposed recommendations. Representatives from rural fire chiefs, land managers, county representative, and the general public provided necessary insight to develop treatments and strategies to best address the unique challenges of fire management in Jerome County.

5.1 Fire Mitigation Opportunities

There are four basic opportunities for reducing the loss of homes and lives to fires. Local and federal fire suppression agencies have been quite active in Jerome County and throughout Southern Idaho in efforts to reduce adverse impacts from wildland fire. Many mitigation activities have been on-going within the county in years past. On-going activities should be encouraged and supported over the long-term. Those that have not been well-supported should be augmented to the greatest extent possible to further reduce fire risk within the county.

There are many single actions that can be taken, but in general they can be lumped into one of the following categories:

- Prevention
- Education/ Mitigation
- Readiness
- Building Codes
- Vegetation Modification

5.1.1 Prevention

The safest, easiest, and most economical way to mitigate unwanted fires is to stop them before they start. Generally, prevention actions attempt to prevent human-caused fires. Campaigns designed to reduce the number and sources of ignitions can be quite effective. Prevention campaigns can take many forms. Traditional “Smokey Bear” type campaigns that spread the message passively through signage can be quite effective. Signs that remind folks of the dangers of careless use of fireworks, burning when windy, and leaving unattended campfires can be quite effective. It’s impossible to say just how effective such efforts actually are, however the low costs associated with posting of a few signs is inconsequential compared to the potential cost of fighting a fire.

The Upper Snake River BLM and local fire departments have been very active over the years in the prevention campaign in southern Idaho. The prevention campaigns have often taken creative and very active forms. Frequent contact with recreational users and homeowners seem to have been very successful. Over time there has been a reduction in the number of human-caused fires within the Upper Snake District. Much of this can be directly attributed to the continuing efforts of local and BLM fire prevention campaigns.

Slightly more active prevention techniques may involve mass media, such as radio or the local newspaper. Fire districts in other counties have contributed the reduction in human-caused ignitions by running a weekly “run blotter,” similar to a police blotter, each week in the paper. The blotter briefly describes the runs of the week and is followed by a weekly “tip of the week” to reduce the threat from wildland and structure fires. The BLM and Forest Service have been a champion of prevention, and could provide ideas for such tips. When fire conditions become high, brief public service messages could warn of the hazards of misuse of fire or any other incendiary device. Such a campaign would require coordination and cooperation with local media outlets. However, the effort is likely to be worth the efforts, costs and risks associated with fighting unwanted fires.

Fire Reporting: Fires cannot be suppressed until they are detected and reported. As the number and popularity of cellular phones has increased, expansion of the #FIRE program throughout Idaho may provide an effective means for turning the passing motorist into a detection resource. The Upper Snake River BLM has been expanding this program along interstates and highways throughout southern Idaho. Further expansion of the program should be encouraged.

5.1.2 Education

Public education and awareness has been and will continue to be a cornerstone in fire mitigation strategies county-wide. Once a fire has started and is moving toward home or other valued resources, the probability of that structure surviving is largely dependent on the structural and landscaping characteristics of the home. Also of vital importance is the accessibility of the home to emergency apparatus. If the home cannot be protected safely, firefighting resources will not jeopardize lives to protect a structure. Thus, the fate of the home will largely be determined by homeowner actions prior to the event.

In many cases, homes can easily be protected by following a few simple guidelines that reduce the ignitability of the home. There are multiple programs such as FIREWISE that detail precautions that should be taken in order to reduce the threat to homes and FIREWORKS TRUNKS a K-12 educational curriculum. Individual home site evaluations can increase homeowners’ awareness and improve the survivability of structures in the event of a wildfire. Maintaining a lean, clean, green zone within at least 100 feet of structures to reduce the potential loss of life and property is highly recommended. Assessing individual homes in the outlying areas can address the issue of escape routes and home defensibility characteristics. Educating the homeowners in techniques for protecting their homes is critical in these environments.

However, knowledge is no good unless acted upon. Education needs to be followed up by action. Any education programs should include an implementation plan. Ideally, funds would be made available to financially assist the landowner making the necessary changes to the home. The survey of the public conducted during the preparation of this WUI Fire Mitigation Plan indicated that approximately 47% of the respondents are interested in participating in this type of an activity.

5.1.3 Readiness

Once a fire has started, how much and how large it burns is often dependent on the availability of suppression resources. In most cases, rural fire departments are the first to respond and have the best opportunity to halt the spread of a wildland fire. For many districts, the ability to reach these suppression objectives is largely dependent on the availability of functional resources and trained individuals. Increasing the capacity of departments through funding and

equipment acquisition can improve response times and subsequently reduce the potential for resource loss.

In order to assure a quick and efficient response to an event, emergency responders need to know specifically where emergency services are needed. Continued improvement and updating of the rural addressing system is necessary to maximize the effectiveness of a response.

5.1.4 Building Codes

The most effective, albeit contentious, solution to some fire problems is the adoption of building codes in order to assure emergency vehicle access and home construction that does not “invite” a fast and intense house fire. Codes that establish minimum road construction standards and access standards for emergency vehicles are an effective means of assuring public and firefighter safety, as well as increasing the potential for home survivability. County building inspectors should look to the fire departments in order to assure adequate minimum standards. Fire districts may want to consider apparatus that may be available during mutual aid events in order that the adopted standards meet the access requirements of the majority of suppression resources. In Jerome County, such standards may be drafted in consultation with the Fire Chiefs and based on National Fire Protection Association (NFPA) standards in order to assure accessibility is possible for all responding resources.

5.1.5 Vegetation Modification

There are numerous methods by which vegetative modification can help reduce the manner in which vegetative fuels burn. Reducing fuelbed height and density through mechanical, chemical or controlled burning can reduce flame length, rate of spread, and fire intensity when wildland fires occur. That is, tall grass or brush burns with much more vigor than grass that has been controlled. Controlling vegetation species composition can also reduce flammability across the landscape. Planting grass species that remain green for longer periods of time in efforts to control Cheatgrass invasion can reduce fire potential across a landscape. The BLM has often used a mix of crested wheat grass and other native grass species in fire rehabilitation efforts to reduce flammability across the landscape over the long term.

Targeted vegetation modification can be very effective in reducing fire occurrence. Ignition points in Jerome County are frequently concentrated along the roads and railway lines that run through the county. These travel routes have historically served as the primary source of human-caused ignitions. In areas with high concentrations of resource values along these corridors, vegetative treatments such as mowing and planting of less flammable species may be considered in order to provide a fire break in the event of a roadside ignition. Access route mitigation can provide an adequate control line under normal fire conditions. Alternatively, permanent fuel breaks can be established in order to reduce the potential for ignitions originating from the main travel roads to spread into the surrounding lands.

5.2 Existing Practices That Should Continue

Jerome County currently is implementing many projects and activities that have been successful in the potential for mitigating wildland fire risk within the county. By enumerating some of them here, it is the desire of the authors to point out successful activities.

- The dedication of Fire District Volunteers has contributed tremendously to the safety and well-being of residents in Jerome County. Volunteers should be commended and recognized for the sacrifices they make in order to provide the excellent level of community protection afforded to residents throughout Jerome County.

- The aggressive Fire Prevention campaign by local fire departments, the BLM and the Forest Service has contributed to a reduction in the number of human caused fires over time in Jerome County. The prevention program should receive necessary support over the long term.
- Interagency wildfire training that has been an annual event since 1997. The agency cooperation and communication that results as part of this training has greatly enhanced the working relationships among all groups with firefighting responsibilities within the county.
- Extensive use of “memorandums of Understanding” within the county and annual operational planning has lead to the widespread use or the "closest forces” concept. This allows the closest firefighting units to respond to fires, regardless of jurisdiction, resulting in reduced response time.
- The BLM Rural Fire Assistance has made significant contributions to the capabilities of the rural fire districts throughout Jerome County.
- Educational programs such as “Con Palos Safe Kids Coalition” which sponsors an annual safety fair helps keep the community aware of the dangers of wildfire.

5.3 Mitigation Recommendations

As part of the Policy of Jerome County in relation to this planning document, this entire **Wildland-Urban Interface Wildfire Mitigation Plan** should be reviewed annually at a special meeting of the Jerome County Commissioners, open to the public, where action items, priorities, budgets, and modifications can be made or confirmed. A written review of the plan should be approved by the Chairman of the County Commissioners, detailing plans for the year’s activities, and made available to the general public ahead of the meeting (in accord with the Idaho Open Public Meeting Laws). Amendments to the plan should be detailed at this meeting, documented, and attached to the formal plan as an amendment to the WUI Wildfire Mitigation Plan (signatures by the cooperators would be collected at the Chairman’s discretion). Re-evaluation of this plan should be made on the 5th anniversary of its acceptance, and every 5-year period following.

Treatments have been divided between those that should be targeted at county level and those that are specific to individual fire districts. The mitigations recommendations are based on the findings discussed in detail in Chapter 4: Summaries of Risks and Preparedness.

Considering the differing land management philosophies of land management agencies, the county, and private landowners, it is reasonable to expect that consensus building will be necessary before some projects are fully implemented. Combined with other factors such as budget shortages, policies, and interest in participation, it is quite likely that implementation will occur at differing degrees and timeframes over the long-term.

The following Mitigation Recommendations follow a format that identifies a specific **Action Item**, followed by a **Treatment Category** that is tiered to both the National Fire Plan and FEMA. The **Goals and Objectives** of each Action Item are then identified, followed by the **Responsible Organization** for coordinating and implementing the proposed Action Item. Finally, the **Planning Horizon** identifies time frames and estimated costs of implementation, when applicable.

The Federal land management agencies in Jerome County, specifically the Bureau of Land Management, and the state land management agency, the Idaho Department of Lands, are participants in this planning process and have contributed to its development. Where available, their schedule of WUI treatments has been summarized in this chapter to better facilitate a correlation between their identified planning efforts and the efforts of Jerome County.

5.3.1 Treatment Categories

5.3.1.1 WUI Safety and Policy

Wildfire mitigation efforts must be supported by county policies and regulations that maintain a solid foundation for safety and consistency. Because these items are regulatory in nature, they will not necessarily be accompanied by cost estimates. These recommendations are policy related in nature. It is likely that debate and formulation of alternatives will serve to make these recommendations suitable and appropriate for Jerome County.

Prioritization of activities recommended in this plan should be made by the Jerome County Commissioners consistent with the recommendations made in Chapter 1 of this document. During the annual review of this plan, reprioritization can be justified in response to changing conditions and funding opportunities.

5.3.1.2 People and Structures

Many of the recommendations in this category involve education and increasing awareness of the residents of Jerome County. Continuing public education is essential to increase the awareness of the factors that contribute to the wildland fire hazard in Jerome County. Although prevention campaigns and public education efforts have been quite successful in many areas, there is still much that residents can do to protect themselves and their property from wildland fire.

In addition to those items enumerated in Table 5.1, residents and policy makers of Jerome County should recognize certain factors that exist today, that in their absence would lead to an increase in the risk factors associated with wildland fires in the WUI of Jerome County. These items listed below should be encouraged, acknowledged, and recognized for their contributions to the reduction of wildland fire risks:

- **Livestock Grazing** in and around the communities of Jerome County has led to a reduction of many of the fine fuels in rangelands throughout Jerome County. Domestic livestock not only eat these grasses, forbs, and shrubs, but also trample certain fuels to the ground where decomposition rates may increase. There are ample opportunities throughout the county to continue grazing. This will continue to contribute to the economic output of the county as well as reduce fine fuel loading. Livestock grazing in this region should be encouraged into the future as a low cost, positive tool of wildfire mitigation in the Wildland-Urban Interface and in the wildlands.

5.3.1.3 Infrastructure

Significant infrastructure refers to the communications, transportation (road and rail networks), energy transport supply systems (gas and power lines), and water supply that service a region or a surrounding area. Protection of these elements is critical in protecting the health, safety and economy of Jerome County.

Communication Infrastructure: This component of the WUI seems to be diversified across the county with multiple source and destination points, and a spread-out support network. Although site specific treatments will impact local networks directly, little needs done to insure the system's viability.

Transportation Infrastructure (road and rail networks): This component if the WUI has some potential limitations in Jerome County. The hub of Jerome County's transportation network is located in Jerome (as is the County Seat). Specific infrastructure components have been discussed in this plan.

Ignitions along highways are significant and should be address as part of the implementation of this plan. Various alternatives from herbicides to intensive livestock grazing coupled with mechanical treatments, have been suggested. As part of the multi-agency team WUI team proposed in the previous section, these corridors should be further evaluated with alternatives implemented. A variety of approaches will be appropriate depending on the landowner, fuels present, and other factors. These ignitions are substantial and the potential risk of lives to residents in the area is significant.

Many roads in the county have limiting characteristics, such as steep grades, narrow travel surfaces, sharp turning radii, low load limit bridges and cattle guards, and heavy accumulations of fuels adjacent to some roads. Roads that have these inferior characteristics and access homes and businesses are the priority for improvements in the county. Specific recommendations for these roads are enumerated in Table 5.2.

Energy Transport Supply Systems (gas and power lines): (Jerome County - Appendix I) A number of power and gas lines pass through Jerome County. Many of these pass through undeveloped, rangeland areas that are subject to wildland fire events. In cases where non-flammable steel support structures are used, there is little direct threat of power supply damage. However, where wooden power poles have been used, there is some risk of failure. Since retrofitting of these infrastructure components is not practical, no such recommendations will be made.

Water Supply: In some areas of Jerome County, irrigation water is derived from surface flows that feed larger irrigation network that sustain the county's agricultural economy. High intensity wildfires threaten quality of these surface water sources by removing the organic material and vegetation that keeps sediments from entering streams.

5.3.1.4 Resource and Capability Enhancements

There are a number of enhancements that could increase the capabilities of rural fire districts county-wide. Satisfying these needs will assist in increasing the ability of rural departments to suppress fires quickly, reducing the potential for loss of valued resources. As mentioned previously, the cooperative effort between the BLM and the rural fire districts dramatically increases fire suppression effectiveness county-wide.

5.3.1.5 Regional Land Management Recommendations

Wildfires are an inevitable component of rangeland ecosystem the cover the northern portion of Jerome County. Active land management that modifies fuels, promotes healthy range and forestland conditions, and promotes the use of these natural resources will insure that these lands have value to society and the local region. We encourage the Bureau of Land Management, the Idaho Department of Lands, Industrial land owners, private land owners, and all other landowners in the region to actively administer their Wildland-Urban Interface lands in a manner consistent with the management of reducing fuels and risks in this zone.

5.3.2 County Wide Mitigation Recommendations and Activities

Table 5.1. WUI Action Items Applicable at the County Level

Action Item	Treatment Category	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<p>5.1.a: Develop a formal WUI Advisory Committee comprised of all fire and emergency services entities to coordinate and develop strategies to advance fire mitigation activities county-wide.</p>	<p>Protection of people and structures, infrastructure, and ecosystems</p>	<p>Protection of people and structures, infrastructure, public and firefighter safety and ecosystems by coordinating efforts and improving communication avenues between all parties and improving the ability of decision makers to make informed decisions about wildfire issues.</p>	<p>County Commissioners, Rural Fire Districts, Mid-Snake RC&D, Emergency Services, BLM, and all departments and entities responsible for safety of Jerome County Residents.</p>	<ul style="list-style-type: none"> Year 1 (2004) activity: Develop committee, its membership and service to prioritize and implement the recommended treatments and to build upon the momentum generated during the Jerome County Fire Mitigation planning process. The committee will serve to bring all involved parties together to further build relationships that have developed through the development of the Jerome County Wildland Fire Mitigation Plan to maximize mitigation efforts county-wide. Members potentially to include land management organizations and companies, private landowners, and fire protection personnel.
<p>5.1.b: Continued public education campaigns through targeted media campaigns, brochure and leaflet distribution, mailings, billboards, door-to-door visits, and any other means by which to communicate the need for fire safety throughout Jerome County.</p>	<p>People and Structures</p>	<p>Protection of people and structures by informing the general public of the wildland fire issue county-wide and providing the information and resources they need to act accordingly.</p>	<p>County Commissioners, Rural Fire Districts, Mid-Snake RC&D, Emergency Services, BLM, Forest Service, and all departments and entities responsible for safety of Jerome County Residents.</p>	<ul style="list-style-type: none"> Work together to form a county-wide public education working group to strategize on methods and tactics to maximize outreach effectiveness. Identify and coordinate mitigation opportunities and work as a single cohesive unit to see projects through. Determine needs for educational material and advertising budgets.
<p>5.1.c: Adopt and enforce applicable components of NFPA code 1144 or ICC overview board codes that address the unique needs of</p>	<p>WUI Safety and Policy</p>	<p>Protection of people and structures by applying a standard of road widths,</p>	<p>County Commissioners in cooperation with Rural Fire Districts, Planning and Zoning</p>	<ul style="list-style-type: none"> Year 1 debate and adoption of revised code (2004). Adopt recommended codes. Ensure enforcement of codes by building department. Integrate into county Comprehensive Plan

Table 5.1. WUI Action Items Applicable at the County Level

Action Item	Treatment Category	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
Jerome County. Ensure policy addresses the specific needs of fire suppression resources, building materials and applies to subdivisions as well as new single home construction.		access, water supply, and building regulations suitable to insure new homes can be protected while minimizing risks to firefighters.	and Building Department.	<ul style="list-style-type: none"> Annual review of applicable codes.
5.1.d: Develop comprehensive fire district growth plans that address issues associated with growing populations and integrate into county Comprehensive Plan.	Resources and Capabilities	Protection of people and structures by incorporating new developments and structures into fire protection districts.	Rural Fire District in cooperation with County Commissioners and Planning and Zoning	<ul style="list-style-type: none"> Year 1 (2004): Establish community growth benchmarks for the expansion of district resources. Ongoing Activity: Evaluate need to expand district resources as set benchmarks are reached. Expand planning horizon beyond five-year planning window to ten years. Integrate plan into county growth plan
5.1.e: Investigate funding opportunities for paid, full time rural fire chief positions county wide. Also, investigate potential for full or part time assistant positions.	People and Structures, Resources and Capabilities	Enhance fire protection capabilities by providing opportunities for rural chiefs to seek opportunities to advance the department	Rural Fire District in cooperation with County Commissioners	<ul style="list-style-type: none"> Determine district needs and seek all available funding sources.
5.2.f: Wildfire risk assessments of homes county-wide.	People and Structures	Protect people and structures by increasing awareness of specific risk factors of individual home sites in the at-risk landscapes. Only after these are completed can home site treatments follow.	To be implemented by County Commissioners Office in cooperation with the Rural Fire Departments, Mid Snake RC&D and the BLM. Actual work may be completed by Wildfire Mitigation Consultants or trained volunteers.	<ul style="list-style-type: none"> 500 homes Cost: Approximately \$100 per home site for inspection, written report, and discussions with the homeowners. Total cost of \$50,000. Benefit/Cost ratio of 819:1 for assessments. Action Item: Secure funding and contract to complete the inspections during years 1 & 2 (2005-06). Home site inspection reports and estimated budget for each home site's treatments will be a requirement to receive funding for treatments through grants.

Table 5.1. WUI Action Items Applicable at the County Level

Action Item	Treatment Category	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<p>5.2.g: Home Site WUI Treatments for homes identified as having significant risk as per 5.2.f above.</p>	<p>People and Structures</p>	<p>Protect people, structures, and increase fire fighter safety by reducing the risk factors surrounding homes in the WUI of Jerome County</p>	<p>County Commissioners in cooperation with Rural Fire Districts</p>	<ul style="list-style-type: none"> • 200 homes • Actual funding level will be based on the outcomes of the home site assessments and cost estimates • Estimate that treatments will cost approximately \$750 per home site for a survivable space of roughly 150'. Cost estimate of \$150,000. Coupled with the Assessment costs of \$50,000 for total cost of \$200,000. B/C ratio of 205:1 for assessments and treatments combined. • Home site treatments can begin after the securing of funding for the treatments and immediate implementation in 2005 and will continue from year 1 through 5 (2009).
<p>5.2.h: Community Site WUI treatments for communities identified as having significant risk .</p>	<p>People and Structures</p>	<p>Protect people, structures and communities and increase fire fighter safety by reducing risk factors surrounding communities in the 'WUI of Jerome County.</p>	<p>County Commissioners in cooperation with Rural Fire Districts</p>	<ul style="list-style-type: none"> • 20 communities • Actual funding level will be based on the outcomes of the community assessments and cost estimates. Estimate a cost of \$30,000 per community for total cost of \$600,000. Approximately 10,000 homes directly affected for potential benefit of \$820 million and B/C ratio of 1365:1. • Community treatments can begin after the securing of funding for the treatments and immediate implementation in 2005 and will continue from year 1 through 5 (2009).
<p>5.1.i: Purchase of Fire Works Trunk to assist with Youth and Adult Wildfire Educational Programs</p>	<p>People and Structures</p>	<p>Protect people and structures by increasing awareness of WUI risks, how to recognize risk factors, and how to modify those factors to reduce risk</p>	<p>Mid Snake RC&D, Idaho Department of Lands, USFS Sawtooth NF, Bureau of Land Management, Local School Districts and Local Fire Departments</p>	<ul style="list-style-type: none"> • To start immediately using existing educational program materials and staffing. Costs initially to be funded through existing budgets for these activities to be followed with grant monies to continue the programs as identified in the formal needs assessment. • Education will be on-going over the long term
<p>5.1.j: Development of the Red Zone Program county-wide.</p>	<p>People and Structures, Resources and Capabilities</p>	<p>Protect people, structures, and increase fire fighter safety by identifying factors that contribute to interface risk prior to a fire event to assure public and firefighter safety</p>	<p>To be implemented by Rural Fire Departments, Mid-Snake RC&D and the BLM.</p>	<ul style="list-style-type: none"> • Cost: Training, software and hardware purchases. • Needs: laptops, GPS, digital camera, palm pilot, software.

Table 5.1. WUI Action Items Applicable at the County Level

Action Item	Treatment Category	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<p>5.1.k: Additional repeaters and expanded coverage area to improve emergency communications region-wide.</p>	<p>People and Structures, Resources and Capabilities</p>	<p>Protection of people and structures and firefighter safety by establishing and maintaining clear lines of communication.</p>	<p>Rural and Wildland Fire Districts, SIRCOMM in cooperation with the Mid-Snake RC&D.</p>	<ul style="list-style-type: none"> • Year 1 (2004): Summarize communications system. Identify costs to upgrade existing equipment and locate funding opportunities. • Year 2 (2005): Acquire and install upgrades as needed. • Year 2-3 (2005-06): Identify opportunities for radio repeater towers located in the region for multi-county benefits. • Look to Homeland Security grants.
<p>5.1.l: Develop strategy to assure radio frequency compatibility between Rural Fire Districts, dispatch, the BLM US Forest Service and other emergency services during wide band to narrow band digital conversion</p>	<p>People and Structures, Resources and Capabilities</p>	<p>Protect people, structures, and increase fire fighter safety by assuring good lines of communication during emergency response.</p>	<p>Rural districts, the BLM, SIRCOMM and BDS.</p>	<ul style="list-style-type: none"> • Year 1 (2004): Engage SIRCOMM, Emergency Services, Federal Agencies, Rural Fire Departments in developing strategy for conversion. • Need to discuss with committee members timelines for implementation.
<p>5.1.m: Hire Technical Assistance Coordinator/Special Project Leader to aid grant writing and coordinate training and equipment needs county-wide.</p>	<p>People and Structures, Resources and Capabilities</p>	<p>Protection of people and structures by coordinating county needs and by facilitating writing of district and county grants for fire and other special project grants.</p>	<p>Rural Fire Districts in cooperation with Emergency Services Office and County Commissioners.</p>	<ul style="list-style-type: none"> • Begin discussion between county commissioners and Emergency Services to determine position location and essential functions.
<p>5.1.n: Establish programs to assist in the Retention and Recruitment of Volunteer Fire Fighters</p>	<p>People and Structures</p>	<p>Protection of people and structures by increasing recruitment and retention of qualified, skilled firefighters.</p>	<p>Rural and Wildland Fire Districts working with state legislature and a broad base of county citizenry to identify options, determine plan of action, and implement it.</p>	<ul style="list-style-type: none"> • 5 Year Planning Horizon, extended planning time frame • Target an increased recruitment (+10%) and retention (+20% longevity) of volunteers • Year 1 (2004): Develop incentives program, which may include health insurance, supplemental insurance, and other incentives.

Table 5.1. WUI Action Items Applicable at the County Level

Action Item	Treatment Category	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<p>5.1.o: Identify and post FEMA “Emergency Evacuation Route” signs along the identified Primary and secondary access routes in the county.</p>	<p>People and Structures, Infrastructure</p>	<p>Protection of people and structures by informing residents and visitors of significant infrastructure in the county that will be maintained in the case of an emergency.</p>	<p>County Commissioners in cooperation with Rural Fire Districts and Roads Department.</p>	<ul style="list-style-type: none"> • Purchase of signs (2004). • Posting roads and make information available to residents of the importance of Emergency Routes
<p>5.1.p: Evacuation Planning and Education to inform public of evacuation routes and evacuation procedure.</p>	<p>People and Structures</p>	<p>Protection of people and structures by providing residents and visitors with the information they need for an orderly and safe evacuation.</p>	<p>County Commissioners in cooperation with Rural Fire Districts and Roads Department.</p>	<ul style="list-style-type: none"> • Develop outreach campaign between all involved parties to educate public on evacuation routes and procedure and implement (2004-2005).
<p>5.1.q: Develop rural addressing system for Jerome County.</p>	<p>People and Structures, Infrastructure</p>	<p>Protection of people and structures by reducing emergency response time.</p>	<p>County Planning and Zoning and County Commissioners</p>	<ul style="list-style-type: none"> • Determine monetary needs for acquisition of necessary computer hardware and software for database creation. • Acquire necessary equipment, which is likely to include desktop computer, GPS, GIS software and other emergency management programs.
<p>5.1.r: Update and improve Road Signing and Rural Addressing compliant with NFPA standards for visibility throughout Jerome County</p>	<p>People and Structures, Infrastructure</p>	<p>Protection of people and structures by reducing emergency response time.</p>	<p>County Planning and Zoning and County Commissioners</p>	<ul style="list-style-type: none"> • Update road signage and rural addresses following development of rural addressing to assure that SIRCOMM, rural fire departments, sheriff, and all emergency services are aware of new addresses • New subdivisions should be signed with names as well as county grid addresses to assure consistency in addressing throughout the county
<p>5.1.s: Roadside vegetation treatments to reduce flammability of fuels immediately adjacent to roads at high risk of ignitions.</p>	<p>People and Structures, Infrastructure</p>	<p>Protection of people and structures by reducing probability of ignitions along travel corridors.</p>	<p>County highway department, BLM, and other responsible agencies</p>	<ul style="list-style-type: none"> • Treatments may include mowing, spring application herbicide treatments or other treatments to reduce flammability. • This item is applicable to county and state roads not specifically identified by fire district.
<p>5.1.t: Identification of Resource Staging Areas throughout the county for</p>	<p>People and Structures, Infrastructure</p>	<p>Protection of people and structures by improving tactical</p>	<p>All emergency service organization throughout the</p>	<ul style="list-style-type: none"> • Identify areas throughout the county and share information between all emergency management entities region-wide.

Table 5.1. WUI Action Items Applicable at the County Level

Action Item	Treatment Category	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
coordination during major incidents.		planning efficiency.	county	<ul style="list-style-type: none"> • Post staging area signing at appropriate locations.
5.1.u: Vegetation manipulation and creation of fuel breaks in strategic locations throughout the county to maximize suppression opportunities and effectiveness throughout Jerome County.	People and Structures, Regional Land Management Recommendations, Infrastructure.	Protection of people and structures and infrastructure, protect ecosystem health and increase public and firefighter safety	County Commissioners, Rural Fire Districts, Mid-Snake RC&D, Emergency Services, BLM, Idaho Department of Lands and private landowners throughout Jerome County.	<ul style="list-style-type: none"> • Identify opportunities throughout the county and work with involved parties for coordination across ownership boundaries. • Periodically review needs and progress and develop budgets accordingly.
5.1.v: Work with interstate highway department to develop compensation mechanism for fire responses along I-84	People and Structures, Infrastructure, Resources and Capabilities	Reduce burden on fire districts by compensation for fire protection.	Rural Fire Districts and Highway Department	<ul style="list-style-type: none"> • Debate and determine fair mechanism for compensation between districts and highway department.
5.1.w: Develop of fire department notification process for agricultural burners.	WUI Safety and Policy	Protection of people and structures by reducing the potential for escaped agricultural fires from jeopardizing life and property.	County Commissioners in cooperation with Rural Fire Districts and BLM	<ul style="list-style-type: none"> • Immediately recommend BLM update burn permits to include physical address. • Year 1 discussion and debate as to mechanisms for burn reporting.

Table 5.1. WUI Action Items Applicable at the County Level

Action Item	Treatment Category	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.1.x: Access Improvements of bridges, cattle guards, and limiting road surfaces	People and Structures, Infrastructure.	Protection of people, structures, infrastructure, and economy by improving access for residents and fire fighting personnel in the event of a wildfire. Reduces the risk of a road failure that leads to the isolation of people or the limitation of emergency vehicle and personnel access during an emergency.	<ul style="list-style-type: none"> County Roads and Bridges Department in cooperation with RC &D, BLM, State of Idaho (Lands and Transportation), Canal districts, other local agency's and rangeland owners. 	<ul style="list-style-type: none"> Year 1 (2004): Update existing assessment of travel surfaces, bridges, and cattle guards in Jerome County as to location. Secure funding for implementation of this project (grants) Year 2 (2005): Conduct engineering assessment of weight restrictions for all surfaces (e.g., bridge load maximums). Estimate cost of \$150,000 which might be shared between County, USFS, BLM, State, and private based on landownership associated with road locations. Year 2 (2005): Post weight restriction signs on all crossings, copy information to rural fire districts and wildland fire protection agencies in affected areas. Estimate cost at roughly \$25-\$30,000 for signs and posting. Year 3 (2006): Identify limiting road surfaces in need of improvements to support wildland fire fighting vehicles and other emergency equipment. Develop plan for improving limiting surfaces including budgets, timing, and resources to be protected for prioritization of projects (benefit/cost ratio analysis). Create budget based on full assessment
5.1.y: Acquisition of necessary radio equipment for communication with BLM	Resources and Capabilities	Increase firefighter safety by improving tactical operations during mutual aid responses.	SIRCOM, BLM Fire districts	<ul style="list-style-type: none"> Assess needs and acquire equipment.
5.1.z Acquisition of "opticon system" to turn traffic lights green when emergency vehicles pass	Resources and Capabilities	Improve response time and public safety by improving the rate at which engines can negotiate towns.	County commissioners, Fire Districts, BLM	<ul style="list-style-type: none"> Assess needs and acquire equipment
5.1.aa Require proposed subdivisions to have a Survivable Space review by local fire district	WUI Safety and Policy	Protection of people and structures by reducing the potential for fires around new communities property.	County commissioners, Fire Districts,	<ul style="list-style-type: none"> Year 1 debate and adoption of revised code (2004). Ensure enforcement of codes by building and fire departments. Integrate into county Comprehensive Plan

5.3.3 First Segregation Fire District- Recommendations and Activities

Table 5.2. WUI Action Items identified for the First Segregation Fire District.

Action Item	Treatment Category	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.2.a: Pursue planned expansion of Eden Fire Station to accommodate training needs and additional apparatus.	Resources and Capabilities, People and Structures	Protection of people and structures by increasing district capabilities by providing facilities for training and housing of additional equipment	First Segregation Fire District and County Commissioners	<ul style="list-style-type: none"> Determine costs of proposed expansion. Seek funding sources and proceed with expansion as soon as funding becomes available.
5.2.b: Acquisition of a large capacity water tender and a Type 1 structure engine.	Resources and Capabilities	Protection of people and structures by direct fire fighting capability enhancements.	First Segregation in conjunction with the BLM's Rural Fire Assistance program	<ul style="list-style-type: none"> Determine needs immediately. Work in conjunction with BLM Rural Fire Assistance program and other funding sources.
5.2.c: Consider funding Fire Chief and training officer as paid, compensated positions.	Resources and Capabilities	Protection of people and structures by increasing ability of district to keep pace with training and administration needs.	First Segregation Fire District and County Commissioners	<ul style="list-style-type: none"> Investigation of funding opportunities and development of position descriptions.
5.2.d: Augment emergency water supply through establishment of dry hydrants and cisterns at designated locations	Resources and Capabilities, People and Structures, Infrastructure	Protection of people and structures by improving water accessibility.	First Segregation and BLM	<ul style="list-style-type: none"> Identify locations immediately to be incorporated into the plan
5.2.e: Acquisition of necessary radio equipment for communication with BLM	Resources and Capabilities	Increase firefighter safety by improving tactical operations during mutual aid responses.	First Segregation Fire District, SIRCOM and BLM	<ul style="list-style-type: none"> Assess needs and acquire equipment.

Table 5.2. WUI Action Items identified for the First Segregation Fire District.

Action Item	Treatment Category	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.2.f: Wildfire risk assessments of at-risk homes.	People and Structures	Protect people and structures by increasing awareness of specific risk factors of individual home sites in the at-risk landscapes. Only after these are completed can home site treatments follow.	To be implemented by County Commissioners Office in cooperation with the First Segregation Fire Department, Mid Snake RC&D and the BLM . Actual work may be completed by Wildfire Mitigation Consultants or trained volunteers.	<ul style="list-style-type: none"> • Need to determine number of homes and any other areas during plan development. • Cost: Approximately \$100 per home site for inspection, written report, and discussions with the homeowners. • Action Item: Secure funding and contract to complete the inspections during years 1 & 2 (2004-05) • Home site inspection reports and estimated budget for each home site's treatments will be a requirement to receive funding for treatments through grants.
5.2.g: Home Site WUI Treatments for at risk homes identified as per 5.4.f above.	People and Structures	Protect people, structures, and increase fire fighter safety by reducing the risk factors surrounding homes in the WUI of Jerome County	County Commissioners in cooperation with Fire Mitigation Consulting company and Rural Fire Districts	<ul style="list-style-type: none"> • Actual funding level will be based on the outcomes of the home site assessments and cost estimates • Estimate that treatments will cost approximately \$1,000 per home site for a survivable space of roughly 150'. Need to determine specific number of homes in order to determine Cost-Benefit Ratio. • Home site treatments can begin after the securing of funding for the treatments and immediate implementation in 2004 and will continue from year 1 through 5 (2008).
5.2.h: Increased wildland and structural training department members.	Resources and Capabilities	Protection of people and structures by direct fire fighting capability enhancements.	Rural and Wildland Fire Districts working with the BLM and USFS for wildland training opportunities and with the State Fire Marshall's Office for structural fire fighting training.	<ul style="list-style-type: none"> • Year 1 (2004): Develop a multi-county training schedule that extends 2 or 3 years in advance (continuously). • Identify funding and resources needed to carry out training opportunities and sources to acquire. • Year 1 (2004): Begin implementing training opportunities for volunteers.

5.3.4 Jerome Rural Fire District- Recommendations and Activities

Table 5.3. WUI Action Items identified for the Jerome Rural Fire District.

Action Item	Treatment Category	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.3.a: Pursue planning and securing of funding for a new sub-station at Cross Roads Point and vicinity.	Resources and Capabilities, People and Structures	Protection of people and structures by increasing district capabilities by providing facilities for training and housing of additional equipment	Jerome Rural Fire District, Emergency Services, County Commissioners, other federal agencies	<ul style="list-style-type: none"> • Finalize station location and secure land. • Determine costs of proposed station as well as additional equipment to outfit station appropriately. • Seek funding sources and proceed with building as soon as funding becomes available.
5.3.b: Continue implementation of BLM Communities-at-Risk project in Big-Little Ranches and Sawtooth Acres area.	People and Structures, Regional Land Management Recommendations	Protection of community by reducing potential for fire to infringe on population center	Jerome Rural Fire in cooperation with BLM and local landowners	<ul style="list-style-type: none"> • Proceed with planned implementation schedule as defined in the Jerome Communities at risk mitigation plan.
5.3.c: Work with Blue Lakes residents for access improvements with the objective of extending fire protection to this community.	WUI Safety and Policy	Protection of people and structures extending fire protection coverage.	Local residents in cooperation Jerome Rural, county roads department and County Commissioners.	<ul style="list-style-type: none"> • Engage community members as soon as possible to determine interest. • Work with landowners adjacent to Yingst Road to secure right-of-way. • Determine costs and proceed with road construction when funding becomes available.
5.3.d: Continue working with Country Club Estates homeowners on finalizing access improvements and development of water sources for incorporation into the fire district.	WUI Safety and Policy	Protection of people and structures extending fire protection coverage.	Local residents in cooperation Jerome Rural, county roads department and County Commissioners.	<ul style="list-style-type: none"> • Continue working with homeowners to assure access requirements and water sources are adequate for department needs. • Formally incorporate County Club Estates once all criteria have been met.
5.3.e: Consider funding Fire Chief and training officer as paid, compensated	Resources and Capabilities	Protection of people and structures by increasing ability of	Jerome Rural Fire District and County Commissioners	<ul style="list-style-type: none"> • Investigation of funding opportunities and development of position descriptions.

Table 5.3. WUI Action Items identified for the Jerome Rural Fire District.

Action Item	Treatment Category	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
positions.		district to keep pace with training and administration needs.		
5.3.f: Augment emergency water supply through establishment of dry hydrants and cisterns at designated locations	Resources and Capabilities, People and Structures, Infrastructure	Protection of people and structures by improving water accessibility.	Jerome Rural and BLM	<ul style="list-style-type: none"> Identify locations immediately to be incorporated into the plan
5.3.g: Wildfire risk assessments of at-risk homes throughout the district.	People and Structures	Protect people and structures by increasing awareness of risk factors of individual home sites in the at-risk landscapes. Only after these are completed can home site treatments follow.	To be implemented by County Commissioners Office in cooperation with the Jerome Rural Fire Department, Mid Snake RC&D and the BLM.	<ul style="list-style-type: none"> Need to determine number of homes and any other areas during plan development. Cost: Approximately \$100 per home site for inspection, written report, and discussions with the homeowners. Action Item: Secure funding and contract to complete the inspections during years 1 & 2 (2004-05) Home site inspection reports and estimated budget for each home site's treatments will be a requirement to receive funding for treatments through grants.
5.3.h: Home Site WUI Treatments for at risk homes identified as per 5.4.f above.	People and Structures	Protect people, structures, and increase fire fighter safety by reducing the risk factors surrounding homes in the WUI of Jerome County	County Commissioners in cooperation with Fire Mitigation Consulting company and Rural Fire Districts	<ul style="list-style-type: none"> Actual funding level will be based on the outcomes of the home site assessments and cost estimates Estimate that treatments will cost approximately \$1,000 per home site for a survivable space of roughly 150'. Need to determine specific number of homes in order to determine Cost-Benefit Ratio. Home site treatments can begin after the securing of funding for the treatments and immediate implementation in 2004 and will continue from year 1 through 5 (2008).
5.3.i: Increased wildland and structural training department members.	Resources and Capabilities	Protection of people and structures by direct fire fighting capability enhancements.	Rural and Wildland Fire Districts working with the BLM and IDL for wildland training opportunities and with the State Fire Marshall's Office for structural fire fighting training.	<ul style="list-style-type: none"> Year 1 (2004): Develop a multi-county training schedule that extends 2 or 3 years in advance (continuously). Identify funding and resources needed to carry out training opportunities and sources to acquire. Year 1 (2004): Begin implementing training opportunities for volunteers.

Chapter 6: Supporting Information

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6.5 Glossary of Terms

Anadromous - Fish species that hatch in fresh water, migrate to the ocean, mature there, and return to fresh water to reproduce (Salmon & Steelhead).

Appropriate Management Response - Specific actions taken in response to a wildland fire to implement protection and fire use objectives.

Biological Assessment - Information document prepared by or under the direction of the Federal agency in compliance with U.S. Fish and Wildlife standards. The document analyzes potential effects of the proposed action on listed and proposed threatened and endangered species and proposed critical habitat that may be present in the action area.

Backfiring - When attack is indirect, intentionally setting fire to fuels inside the control line to contain a rapidly spreading fire. Backfiring provides a wide defense perimeter, and may be further employed to change the force of the convection column.

Blackline - Denotes a condition where the fireline has been established by removal of vegetation by burning.

Burning Out - When attack is direct, intentionally setting fire to fuels inside the control line to strengthen the line. Burning out is almost always done by the crew boss as a part of line construction; the control line is considered incomplete unless there is no fuel between the fire and the line.

Canyon Grassland - Ecological community in which the prevailing or characteristic plants are grasses and similar plants extending from the canyon rim to the rivers edge.

Confine - Confinement is the strategy employed in appropriate management responses where a fire perimeter is managed by a combination of direct and indirect actions and use of natural topographic features, fuel, and weather factors.

Contingency Plans: Provides for the timely recognition of approaching critical fire situations and for timely decisions establishing priorities to resolve those situations.

Control Line - An inclusive term for all constructed or natural fire barriers and treated fire edge used to control a fire.

Crew - An organized group of firefighters under the leadership of a crew boss or other designated official.

Crown Fire - A fire that advances from top to top of trees or shrubs more or less independently of the surface fire. Sometimes crown fires are classed as either running or dependent, to distinguish the degree of independence from the surface fire.

Disturbance - An event which affects the successional development of a plant community (examples: fire, insects, windthrow, timber harvest).

Disturbed Grassland - Grassland dominated by noxious weeds and other exotic species. Greater than 30% exotic cover.

Diversity - The relative distribution and abundance of different plant and animal communities and species within an area.

Drainage Order - Systematic ordering of the net work of stream branches, (e.g., each non-branching channel segment is designated a first order stream, streams which only receive first order segments are termed second order streams).

Duff - The partially decomposed organic material of the forest floor beneath the litter of freshly fallen twigs, needles, and leaves.

Ecosystem - An interacting system of interdependent organisms and the physical set of conditions upon which they are dependent and by which they are influenced.

Ecosystem Stability - The ability of the ecosystem to maintain or return to its steady state after an external interference.

Ecotone - The area influenced by the transition between plant communities or between successional stages or vegetative conditions within a plant community.

Energy Release Component - The Energy Release Component is defined as the potential available energy per square foot of flaming fire at the head of the fire and is expressed in units of BTUs per square foot.

Equivalent Clearcut Area (ECA) - An indicator of watershed condition, which is calculated from the total amount of crown removal that has occurred from harvesting, road building, and other activities based on the current state of vegetative recovery.

Exotic Plant Species - Plant species that are introduced and not native to the area.

Fire Adapted Ecosystem - An arrangement of populations that have made long-term genetic changes in response to the presence of fire in the environment.

Fire Behavior - The manner in which a fire reacts to the influences of fuel, weather, and topography.

Fire Behavior Forecast - Fire behavior predictions prepared for each shift by a fire behavior analysis to meet planning needs of fire overhead organization. The forecast interprets fire calculations made, describes expected fire behavior by areas of the fire, with special emphasis on personnel safety, and identifies hazards due to fire for ground and aircraft activities.

Fire Behavior Prediction Model - A set of mathematical equations that can be used to predict certain aspects of fire behavior when provided with an assessment of fuel and environmental conditions.

Fire Danger - A general term used to express an assessment of fixed and variable factors such as fire risk, fuels, weather, and topography which influence whether fires will start, spread, and do damage; also the degree of control difficulty to be expected.

Fire Ecology - The scientific study of fire's effects on the environment, the interrelationships of plants, and the animals that live in such habitats.

Fire Exclusion - The disruption of a characteristic pattern of fire intensity and occurrence (primarily through fire suppression).

Fire Intensity Level - The rate of heat release (BTU/second) per unit of fire front. Four foot flame lengths or less are generally associated with low intensity burns and four to six foot flame lengths generally correspond to "moderate" intensity fire effects. High intensity flame lengths are usually greater than eight feet and pose multiple control problems.

Fire Prone Landscapes - The expression of an area's propensity to burn in a wildfire based on common denominators such as plant cover type, canopy closure, aspect, slope, road density, stream density, wind patterns, position on the hillside, and other factors.

Fireline - A loose term for any cleared strip used in control of a fire. That portion of a control line from which flammable materials have been removed by scraping or digging down to the mineral soil.

Fire Management - The integration of fire protection, prescribed fire and fire ecology into land use planning, administration, decision making, and other land management activities.

Fire Management Plan (FMP) - A strategic plan that defines a program to manage wildland and prescribed fires and documents the fire management program in the approved land use plan. This plan is supplemented by operational procedures such as preparedness, preplanned dispatch, burn plans, and prevention. The fire implementation schedule that documents the fire management program in the approved forest plan alternative.

Fire Management Unit (FMU) - Any land management area definable by objectives, topographic features, access, values-to-be-protected, political boundaries, fuel types, or major fire regimes, etc., that set it apart from management characteristics of an adjacent unit. FMU's are delineated in FMP's. These units may have dominant management objectives and preselected strategies assigned to accomplish these objectives.

Fire Occurrence - The number of wildland fires started in a given area over a given period of time. (Usually expressed as number per million acres.)

Fire Prevention - An active program in conjunction with other agencies to protect human life, prevent modification, of the ecosystem by human-caused wildfires, and prevent damage to cultural resources or physical facilities. Activities directed at reducing fire occurrence, including public education, law enforcement, personal contact, and reduction of fire risks and hazards.

Fire Regime - The fire pattern across the landscape, characterized by occurrence interval and relative intensity. Fire regimes result from a unique combination of climate and vegetation. Fire regimes exist on a continuum from short-interval, low-intensity (stand maintenance) fires to long-interval, high-intensity (stand replacement) fires.

Fire Retardant - Any substance that by chemical or physical action reduces flareability of combustibles.

Fire Return Interval - The number of years between two successive fires documented in a designated area.

Fire Risk - The potential that a wildfire will start and spread rapidly as determined by the presence and activities of causative agents.

Fire Severity - The effects of fire on resources displayed in terms of benefit or loss.

Foothills Grassland - Grass and forbs co-dominated dry meadows and ridges. Principle habitat type series: blue bunch wheatgrass and Idaho fescue.

Fuel - The materials which are burned in a fire; duff, litter, grass, dead branchwood, snags, logs, etc.

Fuel Break - A natural or manmade change in fuel characteristics which affects fire behavior so that fires burning into them can be more readily controlled.

Fuel Loading - Amount of dead fuel present on a particular site at a given time; the percentage of it available for combustion changes with the season.

Fuel Model - Characterization of the different types of wildland fuels (trees, brush, grass, etc.) and their arrangement, used to predict fire behavior.

Fuel Type - An identifiable association of fuel elements of distinctive species; form, size, arrangement, or other characteristics, that will cause a predictable rate of fire spread or difficulty of control, under specified weather conditions.

Fuels Management - Manipulation or reduction of fuels to meet protection and management objectives, while preserving and enhancing environmental quality.

Gap Analysis Program (GAP) - Regional assessments of the conservation status of native vertebrate species and natural land cover types and to facilitate the application of this information to land management activities. This is accomplished through the following five objectives:

1. Map the land cover of the United States
2. Map predicted distributions of vertebrate species for the U.S.
3. Document the representation of vertebrate species and land cover types in areas managed for the long-term maintenance of biodiversity
4. Provide this information to the public and those entities charged with land use research, policy, planning, and management
5. Build institutional cooperation in the application of this information to state and regional management activities

Habitat - A place that provides seasonal or year-round food, water, shelter, and other environmental conditions for an organism, community, or population of plants or animals.

Heavy Fuels - Fuels of a large diameter, such as snags, logs, and large limbwood, which ignite and are consumed more slowly than flash fuels.

Hydrologic Unit Code - A coding system developed by the U. S. Geological Service to identify geographic boundaries of watersheds of various sizes.

Hydrophobic - Resistance to wetting exhibited by some soils, also called water repellency. The phenomena may occur naturally or may be fire-induced. It may be determined by water drop penetration time, equilibrium liquid-contact angles, solid-air surface tension indices, or the characterization of dynamic wetting angles during infiltration.

Human-Caused Fires - Refers to fires ignited accidentally (from campfires or smoking) and by arsonists; does not include fires ignited intentionally by fire management personnel to fulfill approved, documented management objectives (prescribed fires).

Intensity - The rate of heat energy released during combustion per unit length of fire edge.

Inversion - Atmospheric condition in which temperature increases with altitude.

Ladder Fuels - Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

Landsat Imagery - Land remote sensing, the collection of data which can be processed into imagery of surface features of the Earth from an unclassified satellite or satellites.

Landscape - All the natural features such as grasslands, hills, forest, and water, which distinguish one part of the earth's surface from another part; usually that portion of land which the eye can comprehend in a single view, including all its natural characteristics.

Lethal - Relating to or causing death; extremely harmful.

Lethal Fires - A descriptor of fire response and effect in forested ecosystems of high-severity or severe fire that burns through the overstory and understory. These fires typically consume large woody surface fuels and may consume the entire duff layer, essentially destroying the stand.

Litter - The top layer of the forest floor composed of loose debris, including dead sticks, branches, twigs, and recently fallen leaves or needles, little altered in structure by decomposition.

Maximum Manageable Area - The boundary beyond which fire spread is completely unacceptable.

Metavolcanic - Volcanic rock that has undergone changes due to pressure and temperature.

Minimum Impact Suppression Strategy (MIST) - “Light on the Land.” Use of minimum amount of forces necessary to effectively achieve the fire management protection objectives consistent with land and resource management objectives. It implies a greater sensitivity to the impacts of suppression tactics and their long-term effects when determining how to implement an appropriate suppression response.

Mitigation - Actions to avoid, minimize, reduce, eliminate, replace, or rectify the impact of a management practice.

Monitoring Team - Two or more individuals sent to a fire to observe, measure, and report its behavior, its effect on resources, and its adherence to or deviation from its prescription.

National Environmental Policy Act (NEPA) - This act declared a national policy to encourage productive and enjoyable harmony between humans and their environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and will stimulate the health and welfare of humankind; to enrich the understanding of important ecological systems and natural resources; and to establish a Council on Environmental Quality.

National Fire Management Analysis System (NFMAS) - The fire management analysis process, which provides input to forest planning and forest and regional fire program development and budgeting.

Native - Indigenous; living naturally within a given area.

Natural Ignition - A wildland fire ignited by a natural event such as lightning or volcanoes.

Noncommercial Thinning - Thinning by fire or mechanical methods of precommercial or commercial size timber, without recovering value, to meet MFP standards relating to the protection/enhancement of adjacent forest or other resource values.

Notice of Availability - A notice of Availability published in the Federal Register stating that an EIS has been prepared and is available for review and comment (for draft) and identifying where copies are available.

Notice of Intent - A notice of Intent published in the Federal Register stating that an EIS will be prepared and considered. This notice will describe the proposed action and possible alternatives, the proposed scoping process, and the name and address of whom to contact concerning questions about the proposed action and EIS.

Noxious Weeds - Rapidly spreading plants that have been designated “noxious” by law which can cause a variety of major ecological impacts to both agricultural and wild lands.

Planned Ignition - A wildland fire ignited by management actions to meet specific objectives.

Prescribed Fire - Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition.

Prescription - A set of measurable criteria that guides the selection of appropriate management strategies and actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

Programmatic Biological Assessment - Assesses the effects of the fire management programs on federally listed species, not the individual projects that are implemented under these programs. A determination of effect on listed species is made for the programs, which is a valid assessment of the potential effects of the projects completed under these programs, if the projects are consistent with the design criteria and monitoring and reporting requirement contained in the project description and summaries.

Reburn - Subsequent burning of an area in which fire has previously burned but has left flareable light that ignites when burning conditions are more favorable.

Riparian Habitat Conservation Areas (RHCA) - Portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. RHCAs include traditional riparian corridors, wetlands, intermittent headwater streams, and other areas where proper ecological functioning is crucial to maintenance of the stream's water, sediment, woody debris, and nutrient delivery systems.

Riparian Management Objectives (RMO) - Quantifiable measures of stream and streamside conditions that define good fish habitat and serve as indicators against which attainment or progress toward attainment of goals will be measured.

Road Density - The volume of roads in a given area (mile/square mile).

Sagebrush steppe - Sagebrush steppe is a broad category encompassing many diverse arid and semi-arid grass and shrub plant communities. In this broad community type, a healthy resource is characterized by the presence of native vegetation and the absence of exotic invaders; sufficient ground cover to prevent accelerated soil erosion; and the presence of periodic fire events on some plant communities.

Scoping - Identifying at an early stage the significant environmental issues deserving of study and de-emphasizing insignificant issues, narrowing the scope of the environmental analysis accordingly.

Seral - Refers to the stages that plant communities go through during succession. Developmental stages have characteristic structure and plant species composition.

Serotinous - Storage of coniferous seeds in closed cones in the canopy of the tree. Serotinous cones of lodgepole pine do not open until subjected to temperatures of 113 to 122 degrees Fahrenheit causing the melting of the resin bond that seals the cone scales.

Significant Infrastructure - Roads, bridges, power lines, gas lines or other public or private utilities whose disruption affects individuals outside of the immediate damage zone.

Stand Replacing Fire - A fire that kills most or all of a stand.

Sub-basin - A drainage area of approximately 800,000 to 1,000,000 acres, equivalent to a 4th - field Hydrologic Unit Code.

Surface Fire - Fire which moves through duff, litter, woody dead and down, and standing shrubs, as opposed to a crown fire.

Survivable Space- An area around a fixed asset (home, garage, barn) that enhances the protection of the assets in the event of a wildfire.

Watershed - The region draining into a river, river system, or body of water.

Wetline - Denotes a condition where the fireline has been established by wetting down the vegetation.

Wildland Fire - Any nonstructure fire, other than prescribed fire, that occurs in the wildland.

Wildland Fire Implementation Plan (WFIP) - A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits. A full WFIP consists of three stages. Different levels of completion may occur for differing management strategies (i.e., fires managed for resource benefits will have two-three stages of the WFIP completed while some fires that receive a suppression response may only have a portion of Stage I completed).

Wildland Fire Situation Analysis (WFSA) - A decision making process that evaluates alternative management strategies against selected safety, environmental, social, economic, political, and resource management objectives.

Wildland Fire Use - The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in FMP's. Operational management is described in the WFIP. Wildland fire use is not to be confused with "fire use", which is a broader term encompassing more than just wildland fires.

Wildland Fire Use for Resource Benefit (WFURB) - A wildland fire ignited by a natural process (lightning), under specific conditions, relating to an acceptable range of fire behavior and managed to achieve specific resource objectives.

Wildland-Urban Interface – The description of areas where human habitation is juxtaposed within or near wildland areas. The four wildland-urban interface conditions include intermix, interface, occluded, and rural.

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